

THE ALBUMEN-REACTION OF THE SPUTUM IN PULMONARY TUBERCULOSIS.

T H E S I S

For DEGREE of M.D.

by

ROBERT SPEIRS FULLARTON, M.A., M.B. Ch.B.

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THE ALBUMEN-REACTION OF THE SPUTUM IN PULMONARY TUBERCULOSIS.

The following investigation was undertaken with a view to ascertaining the reliability of the so-called "albumen-reaction" of the sputum as a test in diseases of the respiratory system, and in the hope that if found reliable the reaction would prove useful in the diagnosis of tubercular disease of the lungs.

In July, 1909, Roger and Levy-Valensi (1) communicated to the Société Médicale des Hôpitaux de Paris the results of their examination of the sputum for albumen in 71 cases of various pulmonary diseases.

The method employed was to take a small quantity of sputum, mix it with water, add a few drops of acetic acid in order to coagulate mucin and nucleo-albumen, filter, and test the filtrate for albumen either by heat or by means of a concentrated solution of ferrocyanide of potash. Of the cases examined, 32 were cases of pulmonary tuberculosis, including one acute case, one in the first stage of the disease, 16 in the second, and 14 in the third stage, i.e. presenting cavities. In every case the sputum contained albumen. Five cases

in ordinary bronchitis, but a true transudation; and that in cardiac cases one sometimes sees a true bronchitis, that is a mucous secretion, and sometimes a serous transudation.

At a later meeting of the same Society (October 1909) Roger (2) referred to 46 new observations made partly by himself and partly by Mlle.Vourmann upon the sputa of tuberculous patients. In every case albumen was present, and in several cases served to clinch a doubtful diagnosis or led to a more careful examination resulting in the finding of a tuberculous lesion before undetected.

Dr.Mlle.Vourmann (3), in a Paris Thesis 1909, maintained that the examination for albumen in the expectoration was of diagnostic importance, and should be regularly carried out. Especially was it of significance in the differential diagnosis between tuberculosis and simple bronchitis, since the absence of albumen in the sputum enabled one with certainty to exclude the diagnosis of tuberculosis. In acute or chronic bronchitis, as also in emphysema, the albumen-reaction was either completely negative, or insignificant and transient, as also in heart and kidney diseases. In pulmonary inflammation albumen was present in the spit during the whole acute stage, while during convalescence it pointed to a new focus or a complication.

In

In April 1910 there was published in *Le Progrès Medical* a paper by Cornu (4) on the albumen-reaction in the diagnosis of pulmonary tuberculosis in asylum practice. The method of examination was the same as that recommended by Roger and Levy-Valensi.

Cornu's examinations were made in 54 cases, with the following results. In 24 cases the albumen reaction was positive. Of these 20 were manifestly bacillary, including 6 with discrete lesions, 7 in the period of infiltration, and 7 in that of excavation. In 3 cases tuberculosis was suspected on ordinary clinical examination, the patients having had repeated attacks of bronchitis and being emaciated, in poor general condition, and lacking appetite for food; but it was difficult to be clinically certain of tuberculosis at the moment of examination. The diagnosis of tuberculosis in the remaining case was doubtful.

In 26 cases the reaction was negative. Of this number 10 appeared clinically healthy, and 16 had simple bronchitis, acute or chronic, with emphysema or catarrh, but in none did the general or local examination suggest tuberculosis.

Cornu had not occasion to experiment on other acute affections of the lung (broncho-pneumonia, pneumonia, pleurisy with effusion). Outside therefore of cardiac or renal complications albumen seemed to be the rule in cases of tuberculosis and

and its absence appeared to warrant the rejection of this diagnosis.

Cornu dealt only with the qualitative examination, but thought that the coagulum of albumen appeared more quickly and was denser in the rapidly advancing forms of tuberculosis. He stated, however, that M. Oddo had made qualitative estimations and found that the amounts of albumen varied from 1.5 to 5 grammes per litre, and that the proportion of globulin increased with the gravity of the case.

Gantz and Hertz (5) in a recent number of the *Berliner Klinische Wochenschrift*, state that they found the albumen reaction positive in inflammatory conditions or oedema of the lungs. They considered the reaction as of special significance in the differential diagnosis between pulmonary tuberculosis and bronchitis, since in the former it was always positive and in the latter negative.

The method followed in the present investigation was practically the same as that employed by the observers above named. A fair quantity, preferably from 20 to 30 cc. of sputum, is taken. To it is added 50% of water and from 10 to 15 drops of dilute acetic acid and the whole is then thoroughly shaken till as homogeneous a mixture as possible is obtained. The measuring, dilution, acidulation and mixing are conveniently effected in a graduated sputum-flask with screwed-on

screwed-on, rubber-lined metal lid. The mixture is then filtered. In many instances a clear filtrate is obtained at once, in others only after repeated filtering. To the clear filtrate a few drops of acetic acid are added in order to precipitate any mucin or nucleo-albumen which may have escaped precipitation by the first acidulation. If any cloudiness appears, the fluid is re-filtered; but this is seldom necessary. The clear filtrate is then tested for albumen by four different tests, viz,- heat, nitric acid, 5% solution of ferrocyanide of potash, and saturated solution of picric acid. These tests are applied exactly as for the detection of albumen in a clear urine. In applying the heat test it was often found that the albumen present was in the form of acid-albumen, and was not coagulated by boiling until the acidity of the fluid was neutralized by the addition of a few drops of liquor potassae. In no case was albumen reckoned present unless it was revealed by all four tests.

In every case the sputum, besides being tested for albumen, was also examined for tubercle bacilli. In almost every case in which bacilli were found they were found without difficulty on the first examination. In only three cases in which the first examination gave a negative result did a subsequent examination yield a positive result.

The

The cases from which sputum was obtained were seen in the Wards (18 cases) and Out-patient Department (10 cases) of the Western Infirmary, at the Corporation Dispensary for phthisis in Oakbank Parochial Hospital (68 cases), and in private practice (4 cases). The majority were cases in which pulmonary tuberculosis had been at least suspected. In the following tables they are grouped in three classes - I, cases of phthisis in which tubercle bacilli were found; II. cases in which tubercle bacilli were not found; but the history, symptoms and physical examination rendered the diagnosis of phthisis reasonably certain; III, cases in which on clinical grounds phthisis could be reasonably excluded.

In the tables the following points are noted -

1. The character of the sputum, whether mucous, muco-purulent, or purulent. This seemed a point of some importance, as it appeared reasonable to suppose that an expectoration which was in any marked degree purulent would be likely to contain albumen, and to contain it in larger amount than would a mucous, non-purulent sputum. It seems a defect in the French observations referred to that no mention is made of the characters of the sputa examined.
2. The amount of albumen found in the sputum. This is indicated approximately by the terms abundant, moderate, slight

slight, a trace, and nil, The latter two terms explain themselves; "slight" corresponds to the term "fractional" in the estimation of albumen in urine by Esbach's albumenometer; i.e. a quantity below 0.5%; "moderate" is equivalent to about 0.2 to 0.3%; by "abundant" is meant quantities from 0.4% upwards.

Table I. Cases clinically phthisis; tubercle bacilli found.

Case No.	Name.	Sex.	Age.	Stage of disease.			Character of sputum.			Albumen.					Tubercle bacilli.	
				Early.	Intermediate	Advanced.	Mucous.	Mucopur.	Purulent.	Abundant.	Moderate.	Slight.	Trace.	Nil.	Many.	Few.
1.	M.P.	F.	11	-	I	-	-	I	-	I	-	-	-	-	I	-
2.	S.Mc.M.	F.	11½	-	I	-	-	I	-	I	-	-	-	-	I	-
3.	A.B.	M.	13	-	-	I	-	I	-	I	-	-	-	-	-	I
4.	M.S.	F.	16	-	-	I	-	I	-	I	-	-	-	-	I	-
5.	M.Mc.M.	F.	17	-	-	I	-	I	-	-	I	-	-	-	-	I
6.	M.M.	F.	17	-	-	I	-	I	-	I	-	-	-	-	I	-
7.	Mrs.H.	F.	19	-	-	I	-	I	-	-	I	-	-	-	I	-
8.	G.W.	M.	22	-	-	I	-	I	-	-	I	-	-	-	I	-
9.	M.E.	F.	22	-	I	-	-	I	-	I	-	-	-	-	I	-
10.	J.M.	F.	22	-	I	-	-	I	-	I	-	-	-	-	-	I
11.	N.G.	F.	22	-	I	-	-	I	-	I	-	-	-	-	I	-
12.	J.D.	F.	22	-	-	I	-	I	-	I	-	-	-	-	I	-
13.	T.G.	M.	23	-	-	I	-	I	-	-	I	-	-	-	-	I
14.	T.M.	M.	24	-	I	-	-	I	-	-	I	-	-	-	-	I
15.	Mrs.W.	F.	25	-	I	-	-	I	-	-	I	-	-	-	I	-
16.	H.L.	M.	26	I	-	-	-	I	-	-	I	-	-	-	-	I
17.	Mrs.C.	F.	26	-	-	I	-	I	-	I	-	-	-	-	I	-
18.	Mrs.Mc.C.T.	F.	27	-	-	I	-	I	-	I	-	-	-	-	I	-
19.	T.R.	M.	27	I	-	-	-	-	I	I	-	-	-	-	I	-
20.	M.H.	F.	28	-	-	I	-	-	I	I	-	-	-	-	I	-
21.	W.Mc.M.	M.	28	I	-	-	-	I	-	I	-	-	-	-	I	-
22.	A.F.	M.	29	-	-	I	-	I	-	I	-	-	-	-	I	-
23.	Mrs.D.	F.	29	-	-	I	-	I	-	I	-	-	-	-	I	-
24.	Mrs.Mc.K	F.	32	-	-	I	-	I	-	-	I	-	-	-	I	-
25.	Mrs.V.	F.	32	I	-	-	-	I	-	-	I	-	-	-	-	I
26.	Mrs.G.	F.	34	-	I	-	-	I	-	I	-	-	-	-	I	-
27.	Mrs.A.	F.	34	I	-	-	-	I	-	I	-	-	-	-	I	-
Carry forward,				5.	8.	14	-	25.	2	18.	9.	-	-	-	20.	7

Table I. continued. Cases clinically phthisis; tubercle bacilli found.

Case No.	Name.	Sex.	Age.	Stage of disease.			Character of sputum.			Albumen.					Tubercle bacilli.	
				Early.	Intermediate.	Advanced.	Mucous.	Mucopur.	Purulent.	Abundant.	Moderate.	Slight.	Trace.	Nil.	Many.	Few.
Brought forward,				5.	8.	14	-	25.	2	18.	9.	-	-	-	20.	7
8.	J.L.	M.	35	-	I	-	I	-	-	-	I	-	-	-	I	-
9.	Mrs. McC.	F.	37	-	-	I	-	I	-	-	I	-	-	-	I	-
10.	J.F.	M.	38	-	I	-	-	I	-	-	I	-	-	-	I	-
11.	E.H.	M.	40	-	I	-	-	I	-	-	I	-	-	-	-	I
12.	Mrs. A.	F.	41	I	-	-	-	I	-	I	-	-	-	-	I	-
13.	A.G.	M.	50	I	-	-	-	I	-	I	-	-	-	-	I	-
14.	Mrs. McC.	F.	56	-	I	-	-	I	-	-	-	I	-	-	I	-
15.	J. McL.	M.	59	-	I	-	-	I	-	I	-	-	-	-	I	-
				7.	13.	15	1.	32.	2	21.	13.	1.	-	-	27.	8

Table II. Cases clinically phthisis; tubercle bacilli not found.

Case No.	Name.	Sex.	Age.	Stage of disease.			Character of sputum.			Albumen.				
				Early.	Moderate.	Advanced.	Mucous.	Mucopur.	Purulent.	Abundant.	Moderate.	Slight.	Trace.	Nil.
6.	J. Mc. L.	F.	10	-	-	I	-	I	-	-	I	-	-	-
7.	W. W.	M.	13	-	I	-	I	-	-	-	-	-	-	I
8.	R. W.	M.	15.	-	I	-	I	-	-	-	I	-	-	-
9.	A. S.	F.	17	-	-	I	-	I	-	I	-	-	-	-
10.	M. A. C.	F.	19	I	-	-	-	I	-	-	I	-	-	-
11.	B. Mc. D.	F.	22	I	-	-	-	I	-	-	I	-	-	-
12.	Mrs. H.	F.	23	I	-	-	-	-	I	I	-	-	-	-
13.	Mrs. Mc. N.	F.	23	I	-	-	-	I	-	I	-	-	-	-
14.	S. D.	F.	31	-	-	I	-	-	I	I	-	-	-	-
15.	Mrs. Mc. L.	F.	33	-	I	-	-	I	-	I	-	-	-	-
16.	E. K.	M.	33	I	-	-	-	I	-	-	I	-	-	-
17.	Mrs. S.	F.	33	-	-	I	-	-	I	-	I	-	-	-
18.	J. M.	M.	41	I	-	-	I	-	-	-	-	-	-	I
19.	W. W.	M.	52	-	-	I	-	-	I	I	-	-	-	-
20.	Mrs. S.	F.	57	-	I	-	-	I	-	-	-	I	-	-
				6.	4.	5	3.	8.	4	6.	6.	1.	-	2

In Table III. are summarized the figures of Tables I. and II. as follows:-

Table III. All cases clinically phthisis.

	Number. of Cases.	Stage of disease.			Character of sputum.				Albumen.				Tubercle bacilli.	
		Early.	Moderate.	Advanced.	Mucous.	Mucopur.	Purulent.	Abundant.	Moderate.	Slight.	Trace.	Nil.	Found.	Not Found.
Table I.	35	7.	13.	15	1.	32.	2	21.	13.	1.	-	-	35	-
" II.	15	6.	4.	5	3.	8.	4	6.	6.	1.	-	2	-	15
		13.	17.	20	4.	40.	6.	27.	19.	2.	-	2	35.	15

Table IV. Cases other than phthisis.

Case No.	Name.	Sex.	Age.	Disease.	Character of sputum.			Albumen.				
					Mucous.	Mucopur.	Purulent.	Abundant.	Moderate.	Slight.	Trace.	Nil.
1.	H.N.	M.	45	Myocardial.....	I	I				I		
2.	J.Mc.D.	M.	55.	Aortic regurgitation	I							I
3.	J.D.	M.	57	Cancer of stomach...		I					I	
4.	Mrs.S.	F.	43	Pernicious anaemia..		I						I
5.	E.F.	M.	17	Pneumonia.....	I			I				
6.	P.H.	M.	32	"		I		I				
7.	A.B.	M.	15	Pneumonia (resolving)		I		I				
8.	R.S.	M.	18	" "		I			I			
9.	F.C.	M.	18	" "		I					I	
10.	G.W.	M.	22	" "		I			I			
11.	J.F.	M.	22	" "		I						I
12.	G.K.	M.	32	" "		I				I		
13.	B.H.	M.	34	" "		I			I			
14.	W.C.	M.	18	Acute bronchitis....		I		I				
15.	J.L.	M.	32	" "		I				I		
16.	M.T.	F.	35	" "	I							I
17.	D.Mc.L.	M.	8	Chronic bronchitis..	I				I			
18.	J.C.	M.	8	" "		I					I	
19.	N.Mc.L.	F.	9	" "		I						I
20.	M.M.	F.	10	" "		I						I
21.	A.B.	M.	12	" "		I						I
22.	W.T.	M.	12	" "	I						I	
23.	M.McG.	F.	13	" "		I		I				
24.	A.R.	F.	13	" "		I				I		
25.	M.B.	F.	13	" "		I				I		
26.	E.H.	F.	18	" "	I						I	
27.	A.P.	F.	24.	" "	I							I

Carry forward,

7. 20 -

5. 4. 5. 5. 8

Table IV. Continued. Cases other than phthisis.

Case No.	Name.	Sex.	Age.	Disease.	Character of sputum.			Albumen.				
					Mucous.	Mucopur.	Purulent.	Abundant.	Moderate.	Slight.	Trace.	Nil.
				Brought forward,	7	20	-	5	4	5	5	8
8.	M.H.	F.	30	Bronchial catarrh...	-	I	-	-	-	-	I	-
9.	J.Mc.C.	M.	30	Chronic bronchitis..	-	I	-	-	-	-	I	-
0.	Mrs.H.	F.	30	" "	I	-	-	-	-	-	-	I
1.	Mrs.Mc.G.	F.	36	" "	I	-	-	-	-	-	I	-
2.	T.N.	M.	36	" "	I	-	-	-	-	-	-	I
3.	S.M.	F.	39	Chr. bronch. & asthma	-	I	-	-	-	I	-	-
4.	W.B.	M.	41	" "	-	-	I	-	-	-	I	-
5.	Mrs.G.	F.	42	" "	-	I	-	-	I	-	-	-
6.	J.C.	M.	44	" "	-	-	I	-	I	-	-	-
7.	Mrs.M.	F.	45	" "	-	I	-	-	-	I	-	-
8.	E.M.	M.	45	" "	I	-	-	-	-	-	-	I
9.	J.D.	M.	46	" "	-	I	-	-	-	I	-	-
0.	Mrs.C.	F.	48	Bronchial catarrh....	I	-	-	-	-	-	-	I
1.	Mrs.Mc.G.	F.	50	Chronic bronchitis...	-	I	-	I	-	-	-	-
2.	J.Mc.L.	M.	50	" "	I	-	-	-	-	-	I	-
3.	J.S.	M.	51	" "	-	I	-	-	-	-	-	I
4.	H.G.	M.	52	" "	-	I	-	-	-	-	-	I
5.	R.Mc.C.	M.	53	" "	-	I	-	-	I	-	-	-
6.	J.Mc.G.	M.	59	" "	-	I	-	-	I	-	-	-
7.	Mrs.M.	F.	60	" "	-	-	I	-	-	-	I	-
8.	P.Mc.G.	M.	60	" "	-	I	-	-	-	-	-	I
9.	J.M.	M.	61	" "	I	-	-	-	-	-	-	I
00.	A.Mc.K.	F.	6	Bronchiectasis.....	-	-	I	I	-	-	-	-
					14.32.	4		7.	8.	8.11.16		

A. Analysis of Table I. (bacillary" cases) shows:-

Albumen absent	.....	in no case	=	0%
"	present in inconsiderable quantity	in 1 case	=	3%
"	" " considerable	" " 34 cases	=	97%

These results are therefore in accordance with the statements of the French authors as to the constant presence of albumen in tubercular sputa; but it is to be noted that in all but one case the sputum was muco-purulent or purulent.

B. Analysis of Table II. (phthisis; T.B. not found) shows:-

Albumen absent	.....	in 2 cases	=	13.3%
"	present in inconsiderable quantity	in 1 case	=	6.7%
"	" " considerable quantity	in 12 cases	=	80%

It is noteworthy that the two sputa in which no albumen was found were mucous in character.

C. Analysis of Table III. (all phthisical cases) shows:-

Albumen absent	.....	in 2 cases	=	4%
"	present in inconsiderable quantity	in 2 cases	=	4%
"	" " considerable quantity	in 46 "	=	92%

D. Analysis of Table IV. (cases not phthisis) shows:-

Albumen absent	.....	in 16 cases	=	32%
"	present in inconsiderable quantity	in 19 cases	=	38%
"	" " considerable quantity	in 15 cases	=	30%

E. A comparison between the phthisical cases in Table III. and the non-phthisical cases in Table IV. shows:-

	Phthisical cases.	Non-phthisical cases.
Albumen absent or inconsiderable.....	4 cases = 8%	35 cases = 70%
" in considerable quantity.....	46 " = 92%	15 " = 30%
	<u>50</u>	<u>50</u>

It may be objected that the great majority (92%) of the phthisical sputa examined were purulent or muco-purulent, while of the non-phthisical sputa only 72% presented these characters, and that this might account for the difference in the amount of albumen present. But if in each table the purulent and muco-purulent sputa alone are considered the following results are obtained:-

	Sputa purulent or mucopurulent.	Albumen considerable.	Albumen absent or slight.
Table I.	34 cases.	33 cases.	1 case.
" II.	12 "	11 "	1 "
Phthisis.....	<u>46</u>	<u>44</u>	<u>2</u>

Table IV.			
Not phthisis..	36 cases.	13 cases.	23 cases.

Comparison of the two sets of cases therefore shows:-

	Phthisical cases.	Non-phthisical cases.
Albumen absent or inconsiderable in	4.4%	64%
" considerable in	95.6%	36%

From this it appears that the presence of albumen, at any rate in other than trifling quantities, does not depend solely on the muco-purulent character of the sputum, but must be determined also by some other factor or factors.

Again, if in each table the mucous sputa alone be considered the following results are obtained:-

Table

	Mucous sputa.	Albumen considerable.	Albumen absent or slight.
Table I.....	1 case.	1 case.	- cases.
" II.....	<u>3</u> "	<u>1</u> "	<u>2</u> "
Phthisis.....	<u>4</u> "	<u>2</u> "	<u>2</u> "

Table IV.

Not phthisis.	<u>14</u> cases.	<u>2</u> cases.	<u>12</u> cases.
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Comparison of the two sets showing:-

	Phthisis cases.	Non-phthisis cases.
Albumen absent or inconsiderable in	50%	86%
" considerable in	50%	14%

Here the high percentage of albumen-free sputa in non-phthisical cases is of interest as compared with the much smaller percentage in phthisical cases; but the number of the latter is too small to permit of any general conclusion being drawn. This is to be regretted, as the albumen-reaction would be a more valuable test were it proved to yield positive results not only in advanced phthisis with muco-purulent sputa, but also in early cases with few physical signs and a mucous expectoration, apparently free from bacilli.

If finally the cases be grouped according to the amount of albumen present in the sputa the following results appear:-

With

With considerable albumen:-

Table	I.	34 cases	} of which 46 = 75% were phthisis.	
"	II.	12 "	}	
"	IV.	<u>15</u> " " "	15 = 25% " not phthisis.	
		<u>61 cases</u>		

With little or no albumen:-

Table	I.	1 case	} of which 4 = 10% were phthisis.	
"	II.	3 cases	}	
"	IV.	<u>35</u> " " "	35 = 90% " not phthisis.	
		<u>39 cases.</u>		

As the great majority of cases with little or no albumen were not phthisis, it is of interest to note the following details regarding the few cases which were regarded as phthisis. .

Case 34, a woman aged 56, the subject of moderately advanced phthisis; with mucopurulent sputum in which T.B. were found, and in which slight albumen was present.

Case 37, a boy aged 13, with thick grey mucopurulent expectoration free from albumen, and in which no T.B. were found on two examinations; when first seen in August, 1910, presented signs of consolidation at base of left lung; these signs were still present in December, and again, on his return in May 1911, from a three month's stay in Bridge-of-Weir Sanatorium. He had also well marked tubercular disease of the lower dorsal vertebrae

vertebrae, which had assumed an active phase in Bridge-of-Weir, necessitating his dismissal from the Sanatorium. The persistent physical signs, and the presence of active tubercular mischief in the vertebral column, rendered a diagnosis of phthisis practically certain.

Case 48, a man aged 41, with a scanty grey mucous expectoration, free from albumen, and in which no T.B. were found on two examinations. A haemoptysis in May, 1910, history of cough, spit and failing strength from then till December, and weakness of respiratory murmur over left apex, determined the diagnosis of early phthisis.

Case 50, a woman aged 27, much emaciated and debilitated, with signs of consolidation at base of right lung, and history of several haemoptyses within a month; sputum copious, muco-purulent, contained slight albumen; T.B. not found; almost certainly phthisis.

Thus though tubercle bacilli were not found in the sputum it seems reasonable to regard the three last mentioned cases as cases of phthisis; and if they are rightly so regarded they form notable exceptions to the general rule, as enunciated by the French observers, that in all cases of phthisis albumen is present in considerable amount.

The

The 35 non-phthisical cases in which little or no albumen was present included the following:-

		Albumen	
		little.	none.
Cardiac disease.....	2 cases	1	1
Pernicious anaemia.....	1 "	-	1
Cancer of stomach.....	1 "	1	-
Pneumonia.....	3 "	2	1
Acute bronchitis.....	2 "	1	1
Chronic bronchitis (including bronchial catarrh)...	26 "	14	12
	<u>35</u>	<u>19</u>	<u>16</u>

The 15 non-phthisical cases in which albumen was present in considerable quantity included the following:-

Pneumonia (resolving).....	6 cases
Acute bronchitis.....	1 "
Chronic bronchitis.....	7 "
Bronchiectasis.....	<u>1</u> "
	<u>15</u>

These 50 non-phthisical cases may also be grouped as under:-

		Albumen little or none.	Albumen considerable.
Cardiac disease.....	2 cases	-	-
Pernicious anaemia.....	1 "	-	-
Cancer of stomach.....	1 "	-	-
Pneumonia	3 "	6 cases	
Acute bronchitis	2 "	1 "	
Chronic bronchitis	26 "	7 "	
Bronchiectasis.....	- "	<u>1</u> "	
	<u>35 cases</u>	<u>15 cases</u>	

With

With regard to these cases it may be noted that in the first four, (cardiac disease, anaemia, cancer), the condition present was that of a simple, more or less chronic bronchitis, and the cases may therefore be included along with the 33 cases of that disease, making in all 37 cases of chronic bronchitis, in 30 of which albumen was absent or slight, and in 7 present in considerable amount. As the French authors emphasise the importance, from the point of view of diagnosis, of the absence of albumen in chronic bronchitis, the following details of these 7 cases are of interest.

Case 67, a boy aged 8, had had measles when one year old and whooping cough at the age of four, and since then had suffered from cough every winter. He had a thin mucous greyish spit, which contained considerable albumen. Tubercle bacilli were searched for thrice, with negative result. Careful examination of the chest on August 15th, August 29th, and November 21st, 1910, failed to reveal any sign of pulmonary mischief.

Case 73, a girl aged 13, with history of having had bronchitis at age of 8 months, and "off and on" ever since. Sputum thick, muco-purulent, containing abundant albumen; no T.B. found. Girl well nourished and healthy looking, but with signs of chronic bronchitis. Von Pirquet's cuti-reaction applied twice, with negative results.

Cases 86, 95, and 96, were men aged respectively 44, 53 and 59; all with a history of cough and spit of many years standing, and all presenting on physical examination the characteristic signs of chronic bronchitis and emphysema. In all cases the sputum was muco-purulent or purulent and contained albumen in considerable quantity. In no case were tubercle bacilli found.

Cases 85 and 91 were women, aged 42 and 50 respectively, with history, physical signs, and character of expectoration in every respect similar to those of the three men just mentioned. It was of course difficult to be sure that none of these cases was tubercular, and one of them, case 86, was on account of a certain degree of emaciation, specially open to suspicion; but he had been out of work for some time and was consequently in poor circumstances. In the remaining six cases a diagnosis of phthisis certainly appeared unjustifiable, and if this view be correct these cases form an exception to the alleged rule that in chronic bronchitis albumen either is absent or is present in insignificant amount.

In the case of Acute Bronchitis with abundant albumen (case 64) the specimen of sputum was obtained during the febrile stage of the disease, and was thick, yellow and muco-purulent. A specimen obtained ten days later, during convalescence, was much

much less purulent, and contained only slight albumen.

Case 65, which showed slight albumen, had acute bronchitis and emphysema, but without fever. In case 66 the sputum was obtained during convalescence, was mucous and contained no albumen. The presence of albumen in considerable quantity during the febrile stage of acute bronchitis seems to have escaped the notice of former observers.

Pneumonia. In three cases albumen was present in slight amount. Case 59 was an apical pneumonia and the sputum was examined two days after the crisis. Case 61 was examined four days after the crisis. Case 62 was one in which a long-delayed resolution gave rise to fears of tubercular disease. The specimen was obtained about a month after the onset of illness, by which time the temperature had returned to normal.

In six cases albumen was present in considerable amount. In two of these the specimens were obtained during the febrile stage; in the others at intervals varying from a few days to (in case 60) almost three weeks after the crisis. In this case also (No. 60) resolution was delayed and phthisis suspected; but neither here nor in case 62 above mentioned did frequently repeated examinations of the sputum reveal the presence of tubercle bacilli.

Bronchiectasis. This case was a little girl aged 6, who had

had suffered from cough and spit ever since an attack of measles at the age of one year. The sputum was purulent, green, malodorous, and contained abundant albumen. It was thrice examined, at intervals of four or five months, for tubercle bacilli, with negative results. The history of the case and the marked improvement which in course of time was observed in the child's condition seemed to warrant the exclusion of phthisis in the diagnosis.

In addition to the 100 cases discussed above, the following 12 cases were examined, but have not been included in the tables, as the diagnosis seemed more or less uncertain. In each, however, what was regarded as the most probable diagnosis has been stated, and reasons for it are given in the case-records which follow.

Table V. Doubtful cases.

A. Cases probably phthisis.

Case No.	Name.	Sex.	Age.	Probable diagnosis.	Sputum.			Albumen.				
					Mucous.	Mucopurulent.	Purulent.	Abundant.	Moderate.	Slight.	Trace.	Nil.
01.	S.B.	F.	8	Early phthisis....	-	I	-	I	I	-	-	-
02.	E.A.	F.	8	Phthisis moderately advanced.....	I	-	-	-	-	-	I	-
03.	M.Mc.I.	F.	9	Early phthisis....	I	-	-	-	-	-	-	I
04.	A.McL.	M.	18	" "	I	-	-	-	-	-	-	I
05.	H.D.	M.	49	" "	-	I	-	-	I	-	-	-
06.	T.C.	M.	61	" "	I	-	-	-	-	-	-	I
					4.	2.	-	-	2	-	I	3

B. Cases probably not phthisis.

					Sputum.			Albumen.				
Case No.	Name.	Sex.	Age.	Probable diagnosis.	Mucous.	Mucopurulent.	Purulent.	Abundant.	Moderate.	Slight.	Traces.	Nil.
7.	A.S.	F.	5	Bronchiectasis.....	-	I	-	I	-	-	-	-
8.	E.D.	F.	5	Chr.bronchopneumonia.	-	-	I	-	-	-	-	I
9.	D.M.	M.	6	Chr. bronchopneumonia	-	I	-	-	-	I	-	-
10.	A.T.	F.	11	Bronchitis.....	I	-	-	-	-	-	-	I
11.	J.M.	M.	17	"	-	-	I	-	-	I	-	-
12.	R.D.	M.	39	"	-	I	-	-	-	-	-	I
					I.	3.	2	I.	-	2.	-	3.

These cases are of interest as illustrating the difficulty often experienced in determining whether a pulmonary condition is tubercular in nature or not, and while they cannot be cited as evidence for or against the reliability of the albumen-reaction, they at least suggest that the reaction affords but slender assistance in the attempt to establish a diagnosis.

Thus of the six cases in which the sputum was free from albumen, and in which therefore the diagnosis of tuberculosis should have been negatived, no fewer than three were regarded as probably tubercular, these being cases in which the expectoration was mucous in character.

CONCLUSIONS

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The foregoing investigation suggests the following conclusions:-

1. In the great majority of cases of pulmonary tuberculosis the expectoration contains albumen in considerable amount; but in a small proportion of cases little or no albumen is found.
2. In acute bronchitis and in pneumonia during the febrile stage, in most cases of pneumonia during the stage of resolution, and in bronchiectasis, albumen is present in the sputum in considerable amount.
3. In cases of bronchial catarrh, in cases of acute bronchitis during the stage of convalescence, in a few cases of resolving pneumonia, and in most cases of chronic bronchitis, whether accompanied or not by asthma or emphysema, the expectoration contains little or no albumen. In a small proportion of cases of chronic bronchitis albumen is present in considerable amount.
4. In cases other than acute (febrile) bronchitis, pneumonia, and bronchiectasis, the finding of albumen in considerable quantity in the sputum is therefore suggestive of the

the existence of pulmonary tuberculosis, though it cannot be held to prove it.

5. On the other hand the absence of albumen from the sputum, or its presence in inconsiderable quantity, suggests, but does not establish, a negative diagnosis.

6. The albumen-reaction is therefore not entirely reliable as a test in diseases of the respiratory system and is of only limited value in the diagnosis of tubercular disease of the lungs.








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- (2). L'albumino-réaction des crachats tuberculeux. By H.Roger.
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- (3). La reserche de l'albumine dans les expectorations, par le
Dr.Mdlle.Vourmann. These de Paris, 1909. (abstract in
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- (4). L'albumino-réaction des crachats dans le diagnostic de la
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May 6th, 1911.).

RECORDS OF CASES.

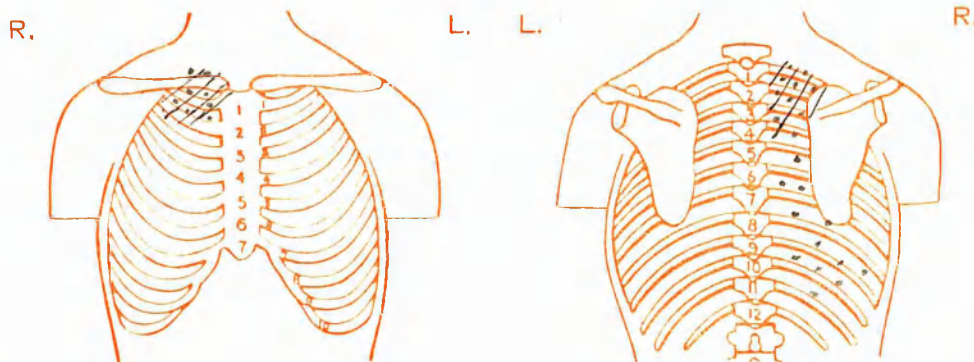
These have been made as brief as possible. In the cases of phthisis in which tubercle bacilli were found details of history and symptoms seemed unnecessary, and mere indications, by means of clinical figures, have been given of the physical signs present on examination. Where bacilli were not found details have been added sufficient to show the grounds on which the diagnosis was based. Among cases regarded as not phthisical only those in which the diagnosis seemed open to doubt have been recorded at any length.

The following symbols are employed in the clinical figures :-

		to indicate dulness on percussion.
	- -	prolonged expiratory sound.
	- -	tubular breathing.
	- -	rhonchi.
	- -	fine, medium & coarse rales.
	- -	friction sounds.
	- -	physical signs of cavity.

Case I. M.P. Female, aged II. Possil Dispensary.

Examined Feb. 16, 1911.

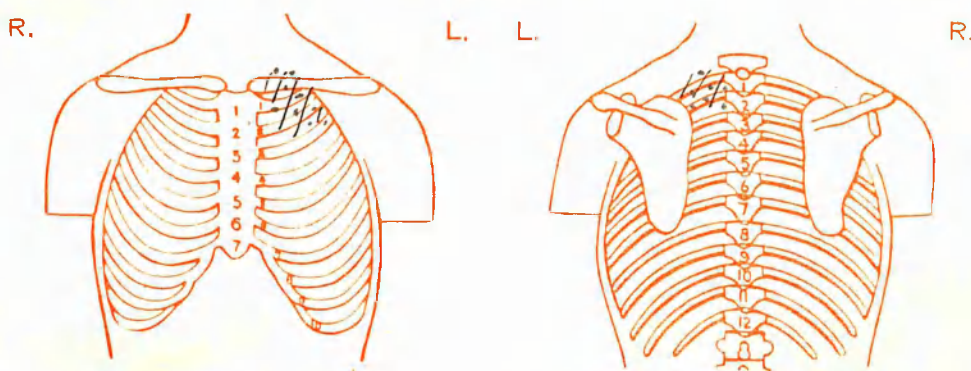


Diagnosis. Phthisis in intermediate stage.

Sputum. Copious, greenish-yellow, muco-purulent
Albumen abundant.
Tubercle bacilli numerous.

Case 2. S.McM. Female, aged II $\frac{1}{2}$. Private practice.

Examined Apr. 11, 1911.

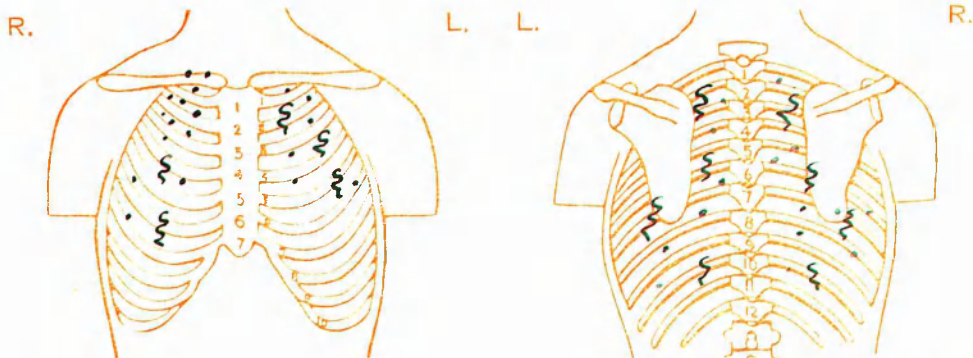


Diagnosis. Phthisis in intermediate stage.

Sputum. Copious, green, muco-purulent.
Albumen abundant.
T.B. numerous.

Case 5. A.B. Male aged 13. Possil Dispensary.

Examined Mar. 3, 1911.



Diagnosis. Advanced phthisis.

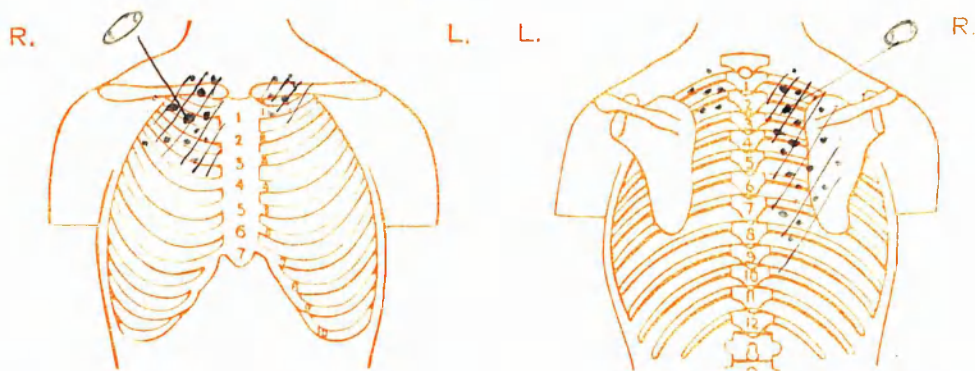
Sputum. Thick, greenish-yellow, mucopur't.
Albumen abundant.
Tubercle bacilli scanty.

(At an earlier examination, Jan. 16, 1911,

Sputum. Thin, mucous, slightly purulent.
Albumen considerable.
T.B. not found.

Case 4. M.S. Female, aged 16. Possil Dispensary.

Examined July 28, 1910.

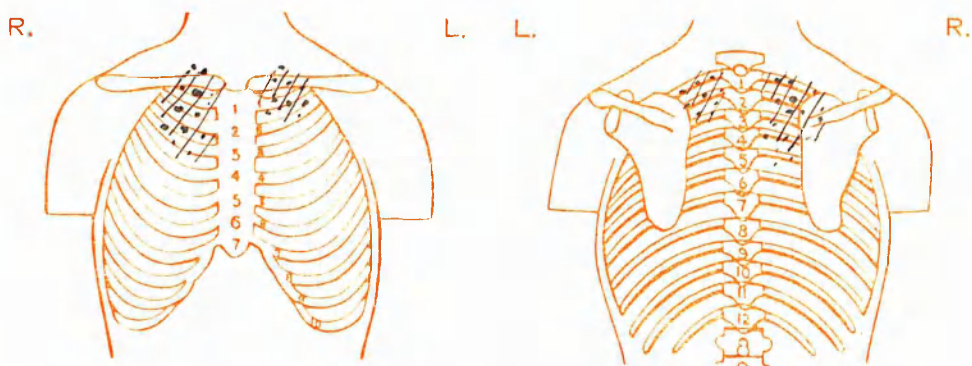


Diagnosis. Advanced phthisis.

Sputum. Copious, thick, green, mucopurulent.
Albumen abundant.
Tubercle bacilli numerous.

Case 5. M.McM. Female, aged 17. Western Infirmary Dispensary.

Examined Aug. 20, 1910.

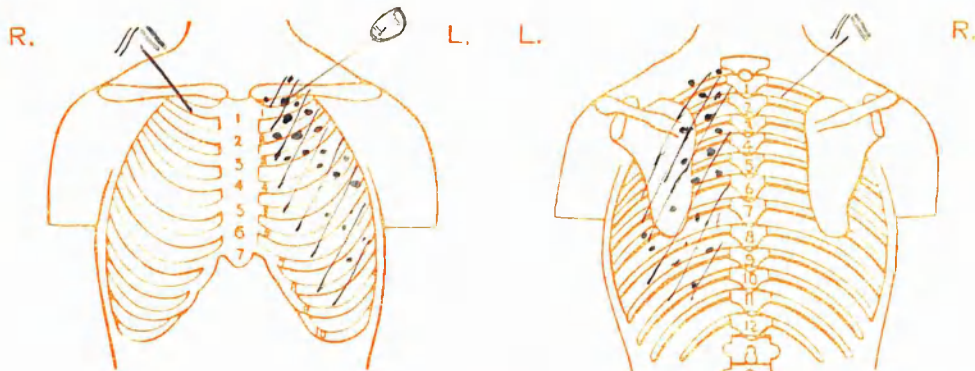


Diagnosis. Advanced phthisis.

Sputum. Thick, green, mucopurulent.
Albumen abundant considerable.
T.B. scanty.

Case 6. M.M. Female, aged 17. Possil Dispensary.

Examined Nov. 5, 1910.

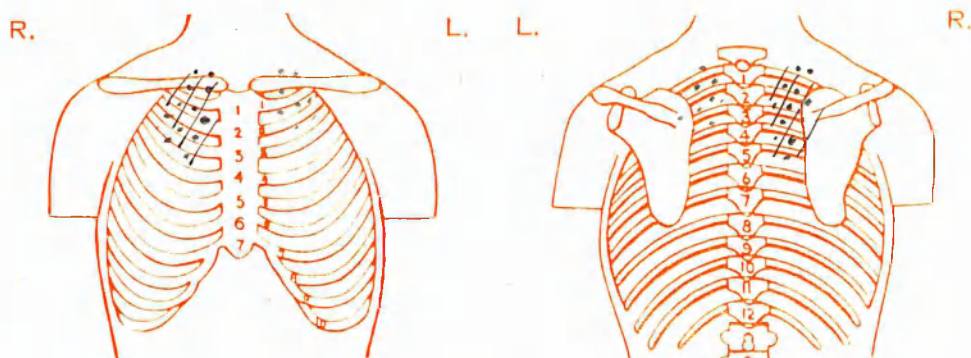


Diagnosis. Advanced phthisis.

Sputum. Scanty, greenish-yellow, mucopurulent.
Albumen abundant.
Tubercle bacilli numerous.

Case 7. Mrs H. aged 19. Possil Dispensary.

Examined Aug. 29, 1910.

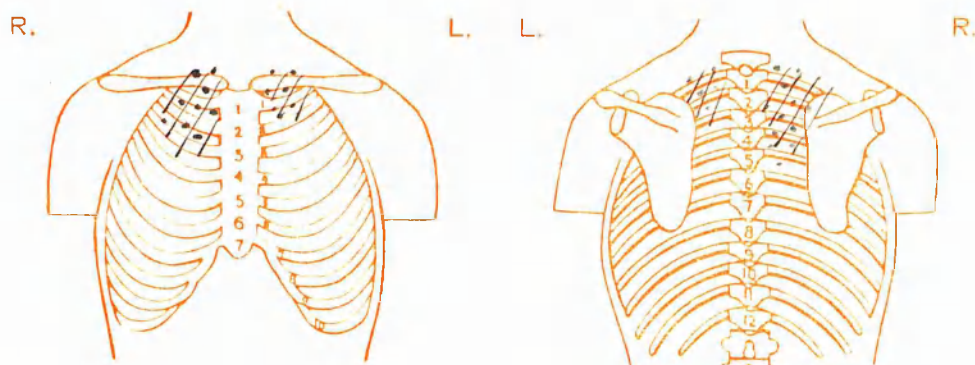


Diagnosis. Advanced phthisis.

Sputum. Scanty, greenish, mucopurulent.
Albumen considerable.
T.B. numerous.

Case 8. C.W. Male, aged 22. Possil Dispensary.

Examined May 8, 1911.

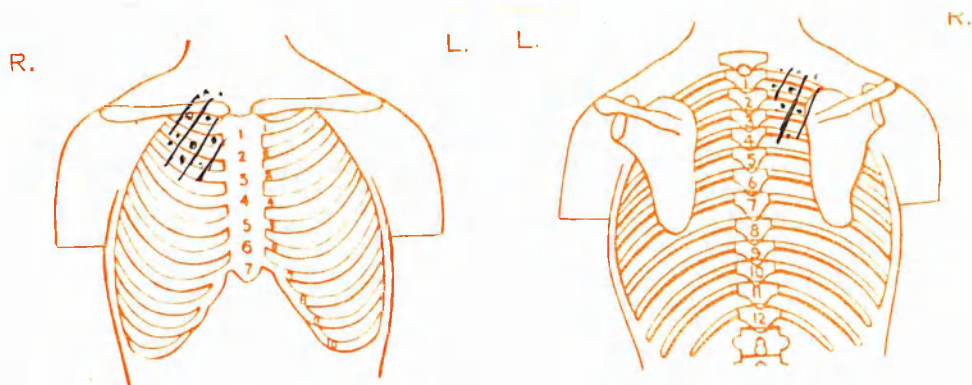


Diagnosis. Advanced phthisis.

Sputum. Greenish-yellow, mucopurulent.
Albumen considerable.
Tubercle bacilli numerous.

Case 9. M.E. Female, aged 22. Dispensary, Western Infirmary.

Examined Aug. 13, 1910.

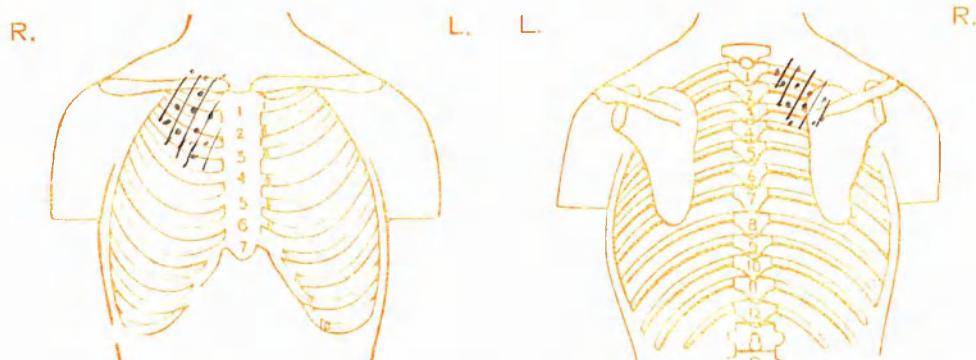


Diagnosis. Phthisis in intermediate stage.

Sputum. Thick, green, mucopurulent.
Albumen abundant.
T.B. numerous.

Case IO. J.M. Female, aged 22. Possil Dispensary.

Examined Sep.22, 1910.

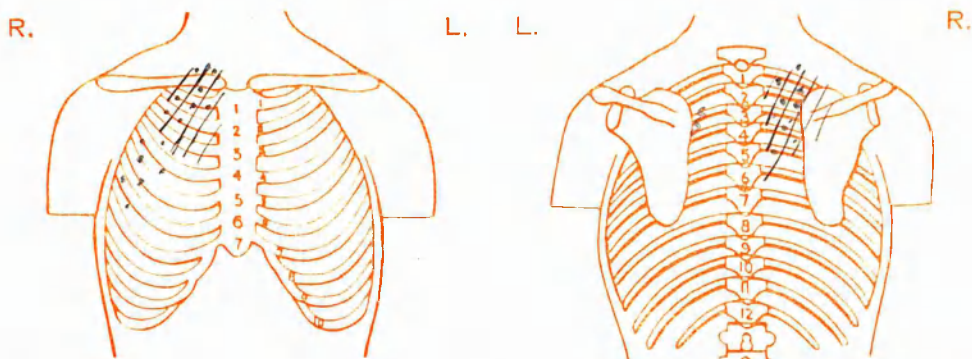


Diagnosis. Phthisis in intermediate stage

Sputum. Copious, greenish-yellow, mucopur't.
Albumen abundant.
Tubercle bacilli scanty.

Case II. N.G. Female, aged 22. Possil Dispensary.

Examined Nov.24, 1910.

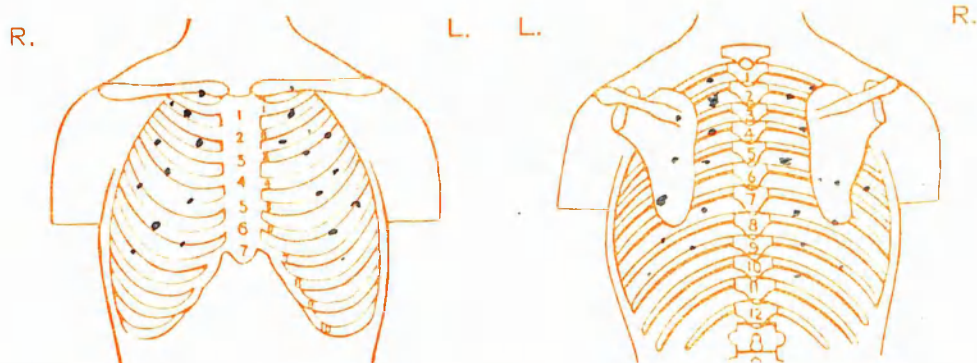


Diagnoais. Phthisis in intermediate stage.

Sputum. Scanty, thick, grey-yellow, mucopur't.
Albumen abundant.
T.B. numerous.

Case I2. J.D. Female, aged 22. Possil Dispensary.

Examined Nov.10, 1910.

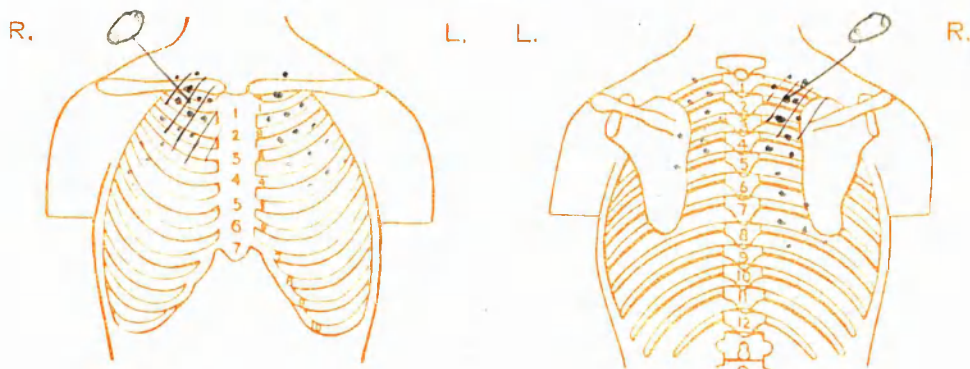


Diagnosis. Advanced phthisis.

Sputum. Copious, thick, green-yellow, mucopurulent.
Albumen abundant.
Tubercle bacilli numerous.

Case I3. T.G. Male, aged 23. Possil Dispensary.

Examined Nov.28, 1910.

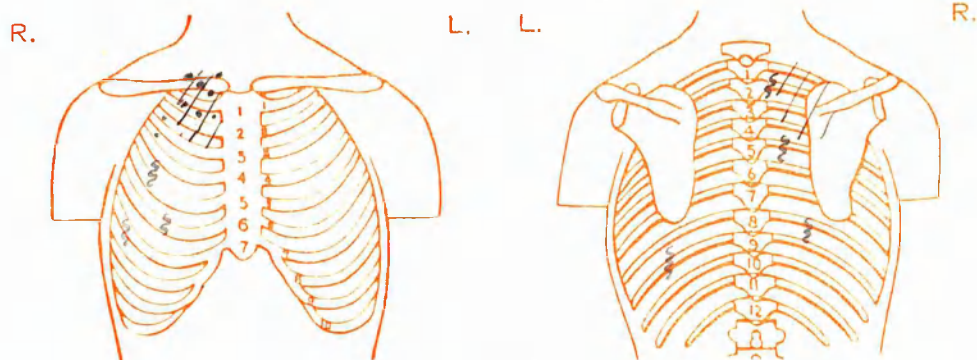


Diagnosis. Advanced phthisis.

Sputum. Greenish-yellow, mucopurulent.
Albumen considerable.
T.B. scanty.

Case I4. T.M. Male, aged 24. Possil Dispensary.

Examined Oct.10, 1910.

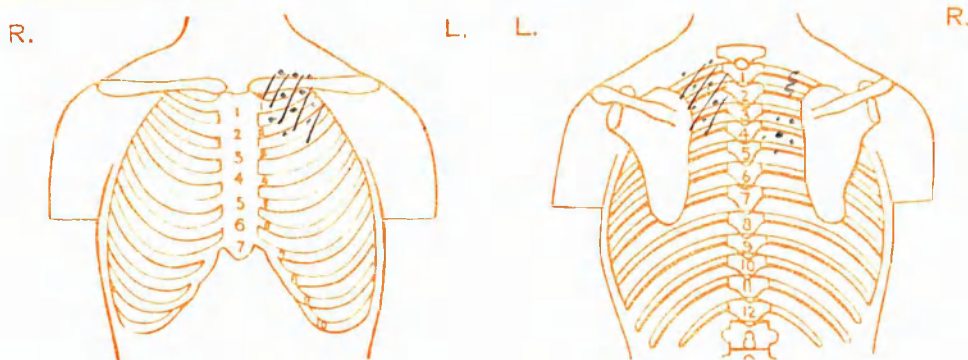


Diagnosis. Phthisis in intermediate stage.

Sputum. Scanty, greenish, mucopurulent.
Albumen considerable.
T.B. scanty (on 2nd examination).

Case I5. Mrs W. aged 25. Possil Dispensary.

Examined Mar.2, 1911.

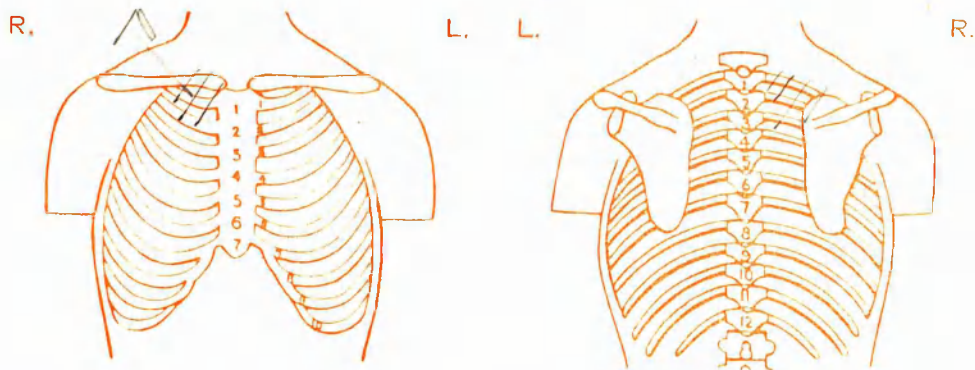


Diagnosis. - Phthisis in intermediate stage.

Sputum. Thick, greenish-yellow, mucopur't.
Albumen considerable.
T.B. numerous.

Case I6. H.L. Male, aged 26. Possil Dispensary.

Examined Apr.17, 1911.

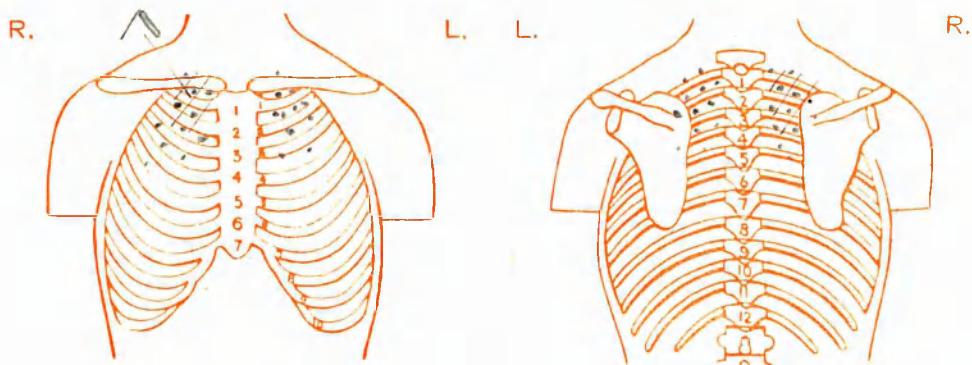


Diagnosis. Early phthisis.

Sputum. Copious, greyish-yellow, mucopur't.
Albumen considerable.
Tubercle bacilli scanty.

Case I7. Msr C. aged 26. Dispensary, Western Infirmary.

Examined Apr.26, 1910.



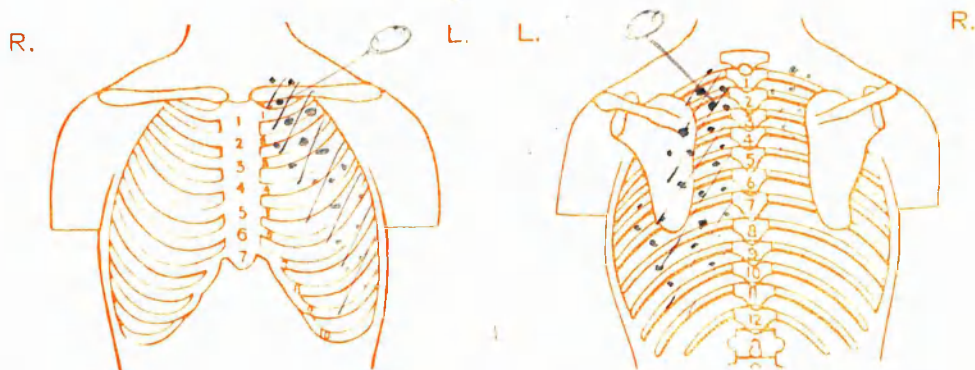
Diagnosis. Advanced phthisis.

Sputum. Greenish-white, nummular.
Albumen abundant.
T.B. numerous.

Case 13. Mrs McC. aged 26:

Possil Dispensary.

Examined Dec.3, 1910.



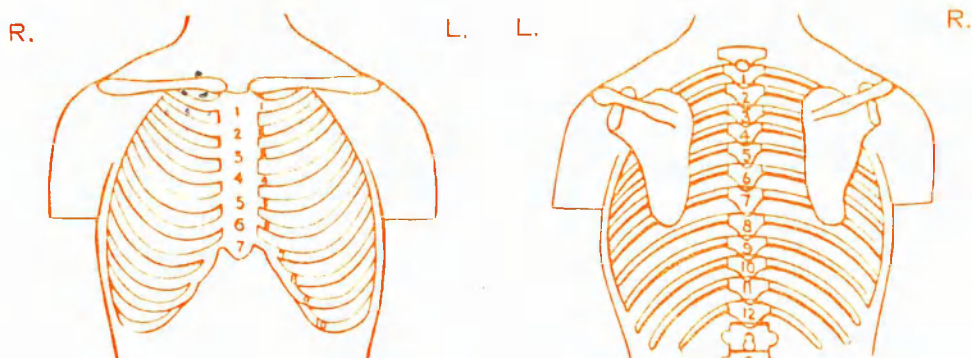
Diagnosis. Advanced phthisis.

Sputum. Scanty, thick, mucopurulent.
Albumen abundant.
Tubercle bacilli numerous.

Case 19. T.R. Male, aged 27.

Possil Dispensary.

Examined Feb.6, 1911.

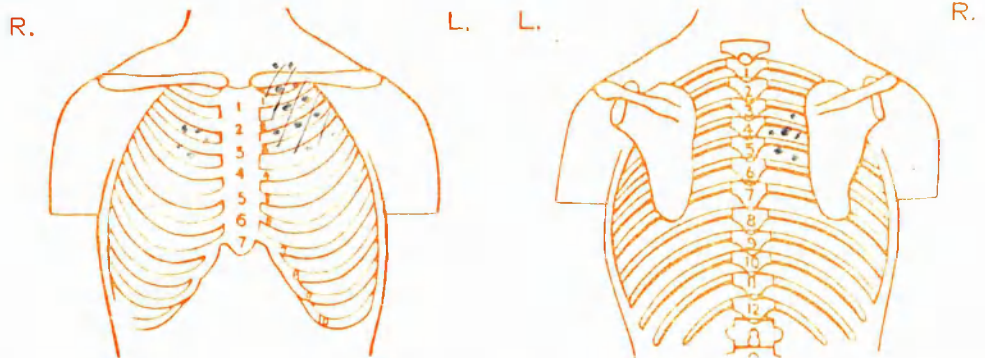


Diagnosis. Early phthisis.

Sputum. Scanty, thin, green, foetid, purul't.
Albumen abundant.
T.B. numerous.

Case 20. M.H. Female, aged 28. Ward 30, Western Infirmary.

Examined May , 1911.

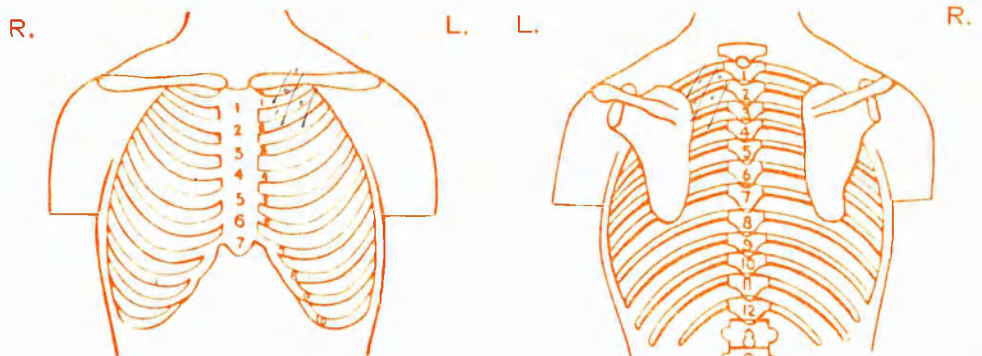


Diagnosis. _ Advanced phthisis.

Sputum. Copious, thin, purulent.
Albumen abundant.
Tubercle bacilli numerous.

Case 21. W.McM. Male, aged 28. Possil Dispensary.

Examined Oct. 18, 1910.

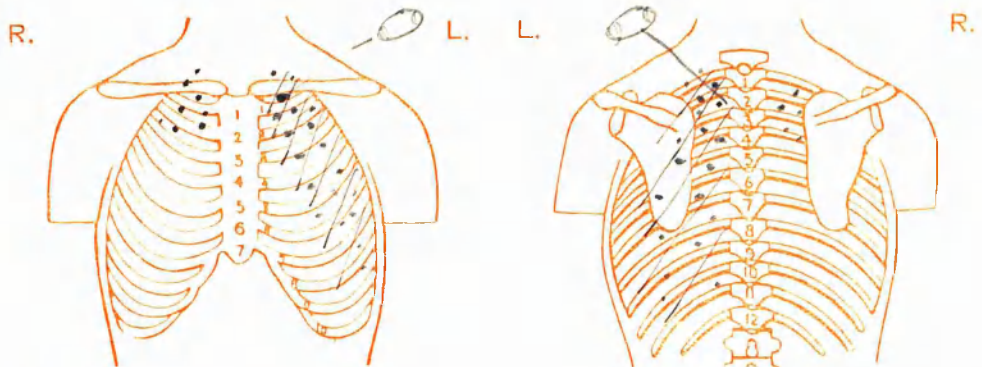


Diagnosis. Early phthisis.

Sputum. Scanty, grey-green, mucopurulent.
Albumen abundant.
T.B. numerous.

Case 22. A.F. Male, aged 29. - Possil Dispensary.

Examined May 12, 1910.

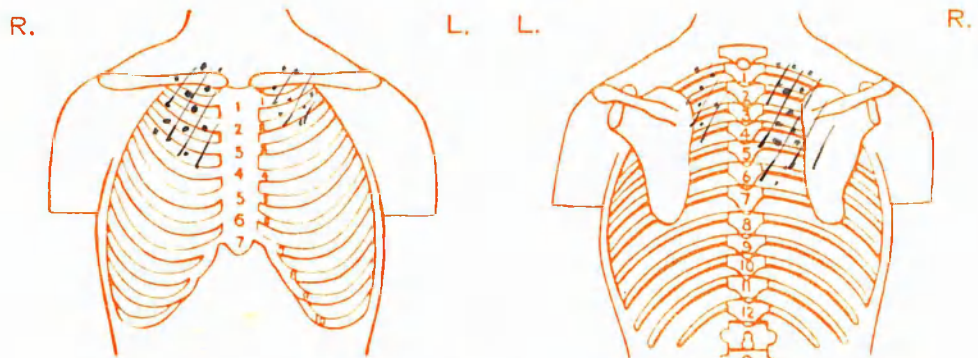


Diagnosis. Advanced phthisis.

Sputum. Thick, yellow-grey, mucopurulent.
Albumen abundant.
Tubercle bacilli numerous.

Case 23. Mrs D. aged 29. Possil Dispensary.

Examined Dec. 8, 1910.

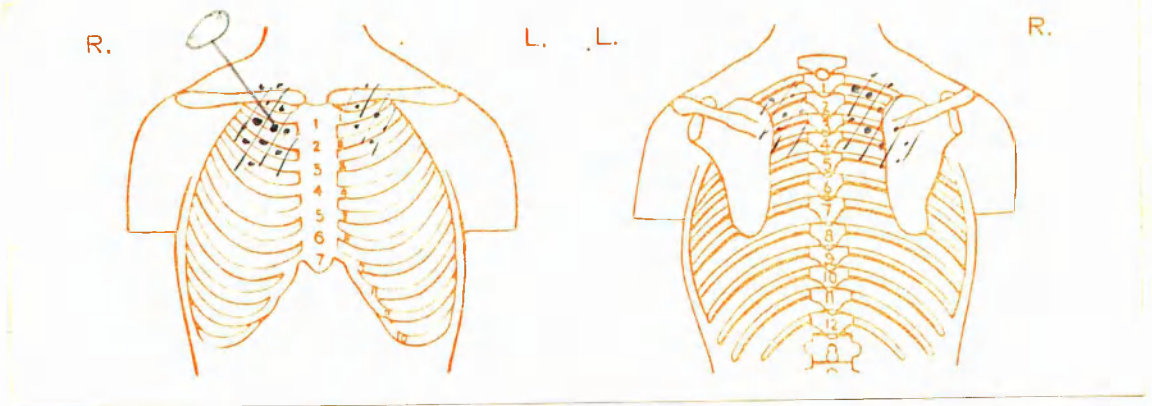


Diagnosis. Advanced phthisis.

Sputum. Scanty, yellowish-green, mucopur't.
Albumen abundant.
T.B. numerous.

Case 24. Mrs McK. aged 32. Possil Dispensary.

Examined June 16, 1910.

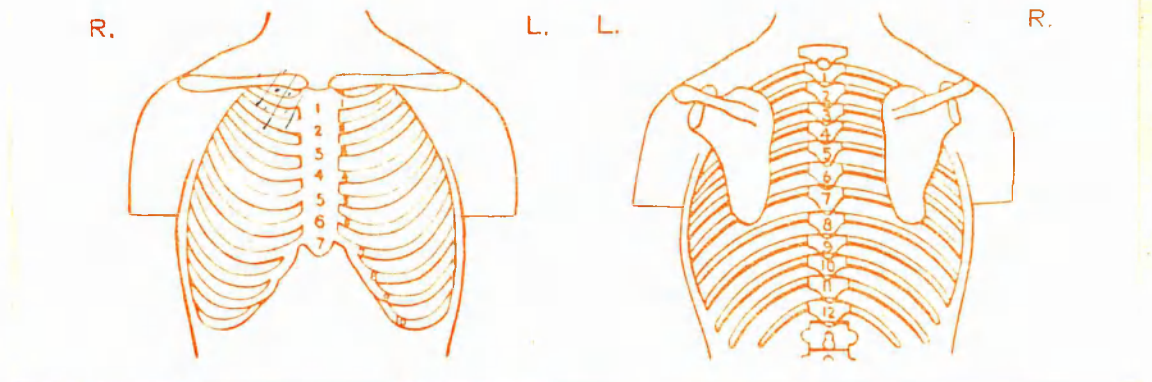


Diagnosis. Advanced phthisis.

Sputum. Copious, greenish, mucoputulent.
Albumen considerable.
Tubercle bacilli numerous.

Case 25. Mrs V. aged 32. Possil Dispensary.

Examined Dec. 29, 1910.

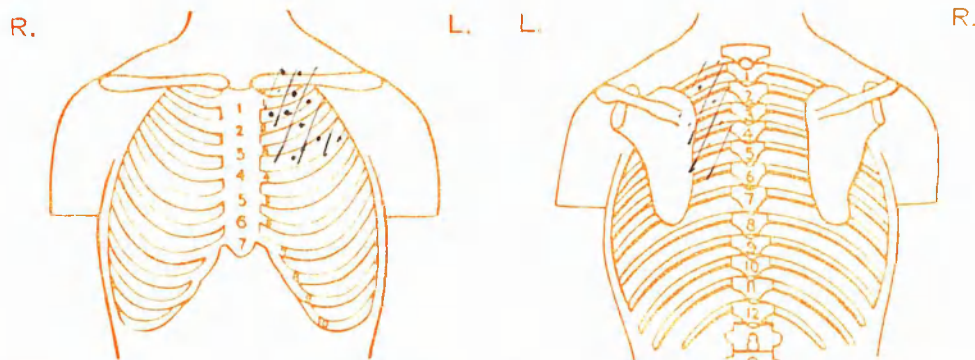


Daignosis. Early phthisis.

Sputum. Copious, greyish-yellow, mucopur't.
Albumen considerable.
T.B. scanty.

Case 26. Mrs G. aged 34. Possil Dispensary.

Examined July 14, 1910.

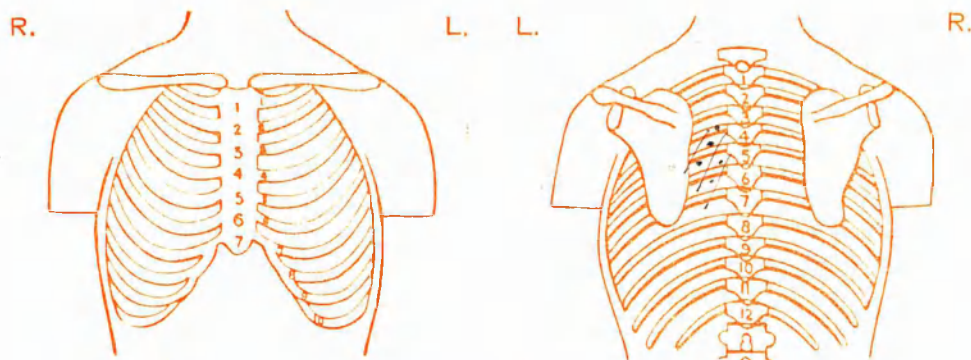


Diagnosis. Phthisis in intermediate stage.

Sputum. Copious, green, mucopurulent.
~~Albumen abundant.~~ numerous.
Albumen abundant.
Tubercle bacilli numerous.

Case 27. Mrs A. aged 34. Possil Dispensary.

Examined Aug.4, 1910.

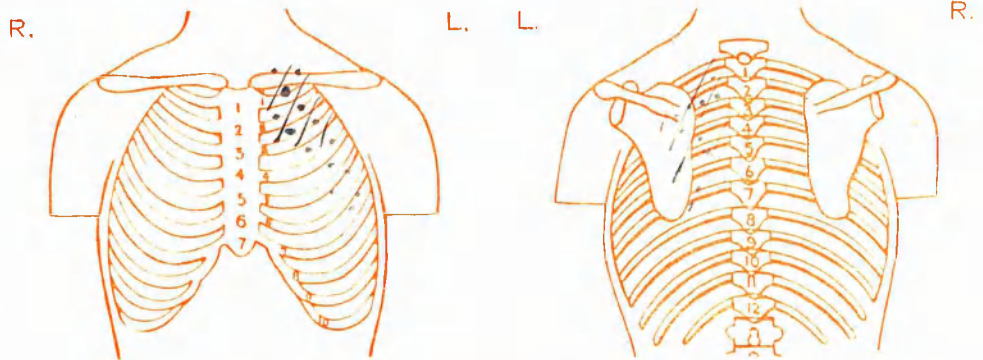


Diagnosis. Early phthisis.

Sputum. Thick, green, mucopurulent.
Albumen abundant.
T.B. numerous.

Case 28. J.L. Male, aged 35. Possil Dispensary.

Examined May 30, 1910.

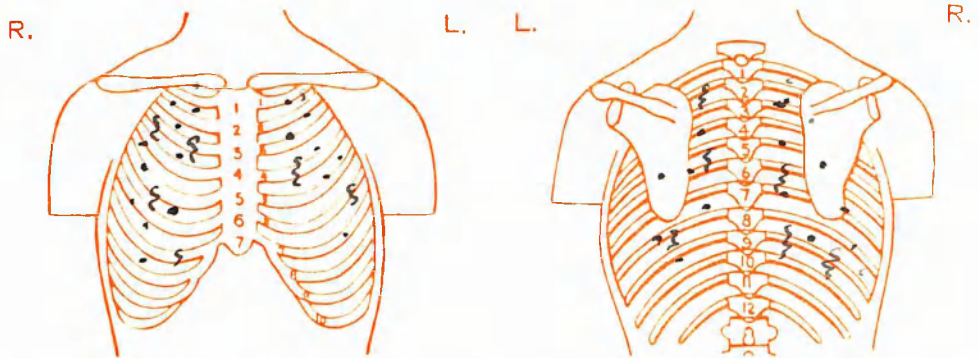


Diagnosis. Phthisis in intermediate stage.

Sputum. Thick, mucous, slightly purulent.
Albumen considerable.
T.B. numerous. (on 3rd examination)

Case 29. Mrs McC. aged 37. Possil Dispensary.

Examined Jan. 19, 1911.

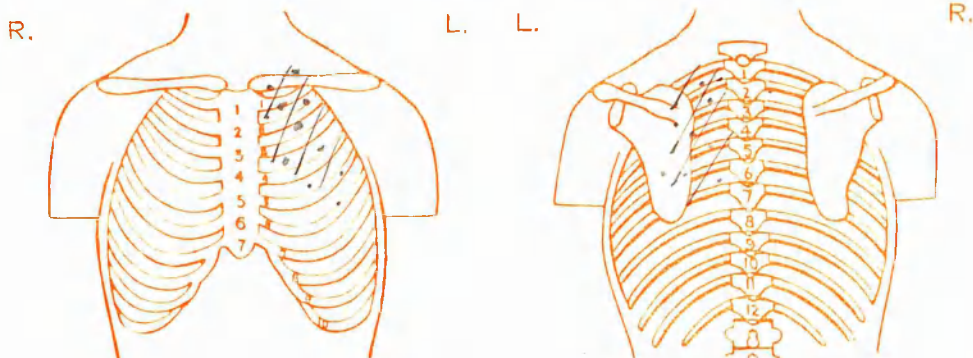


Diagnosis. Advanced phthisis.

Sputum. Scanty, thick, mucopurulent.
Albumen considerable.
T.B. numerous.

Case 30. J.F. Male, aged 38. Private patient.

Examined May , 1911.

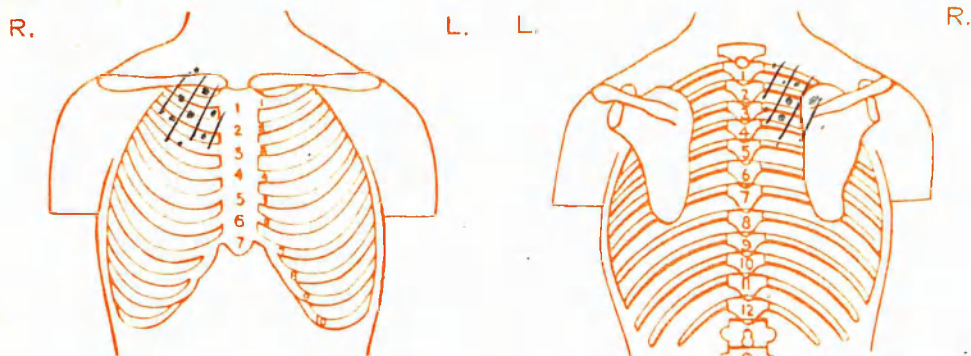


Diagnosis. Phthisis in intermediate stage.

Sputum. Copious, greyish-yellow, mucop't.
Albumen considerable.
Tubercle bacilli abundant.

Case 31. E.H. Male, aged 40. Ward 31, Western Infirmary.

Examined Feb. 23, 1911.

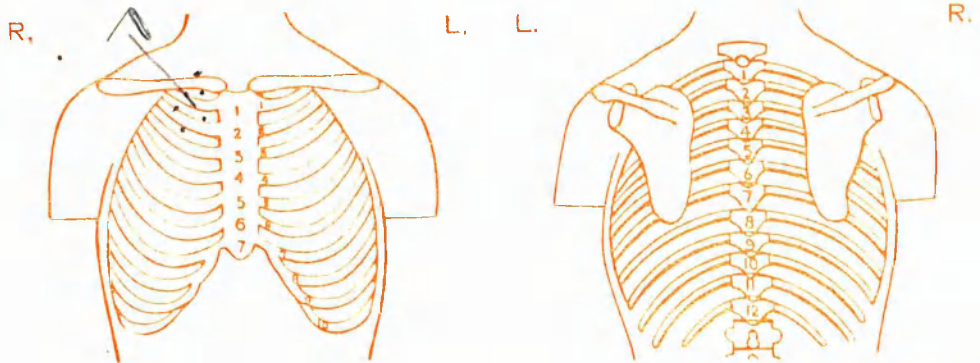


Diagnosis. - Phthisis in intermediate stage.

Albumen considerable.
Sputum yellow, mucopurulent.
T.B. scanty.

Case 32. Mrs A., aged 41. - Possil Dispensary.

Examined Oct. 13, 1910.

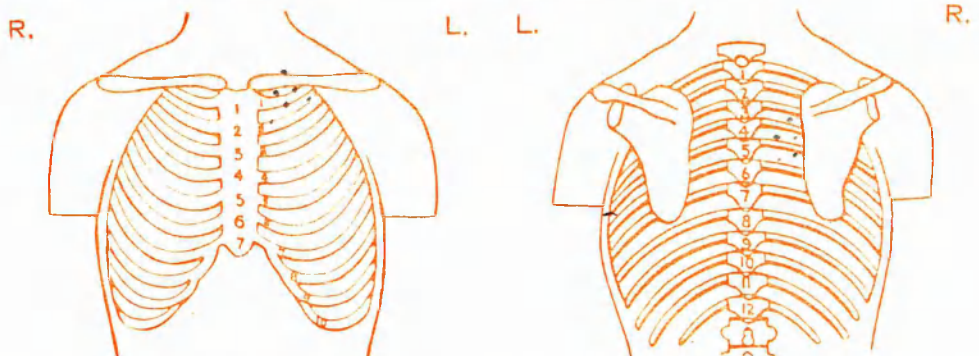


Diagnosis. Early phthisis.

Sputum. Copious, yellow, mucopur't.
Albumen abundant.
Tubercle bacilli numerous.

Case 33. A.G. aged 50. Male. Possil Dispensary.

Examined July 25, 1910.



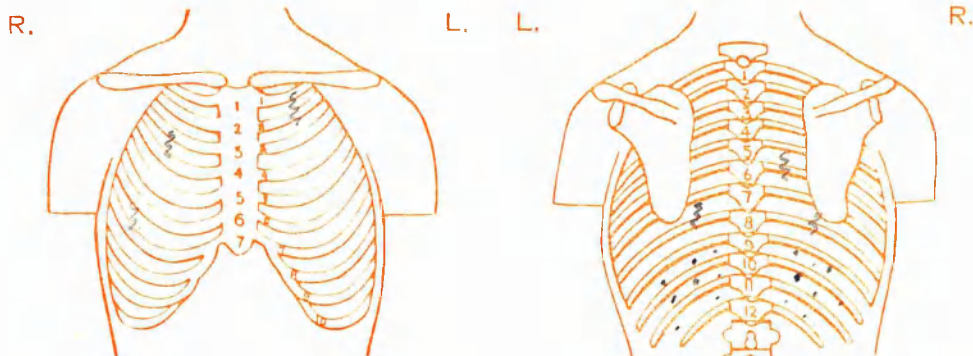
Diagnosis. Early phthisis.

Sputum. Copious, green, mucopurulent.
Albumen abundant.
T.B. numerous.

Case 34. Mrs McC. aged 56.

Possil Dispensary.

Examined Mar.9, 1911.

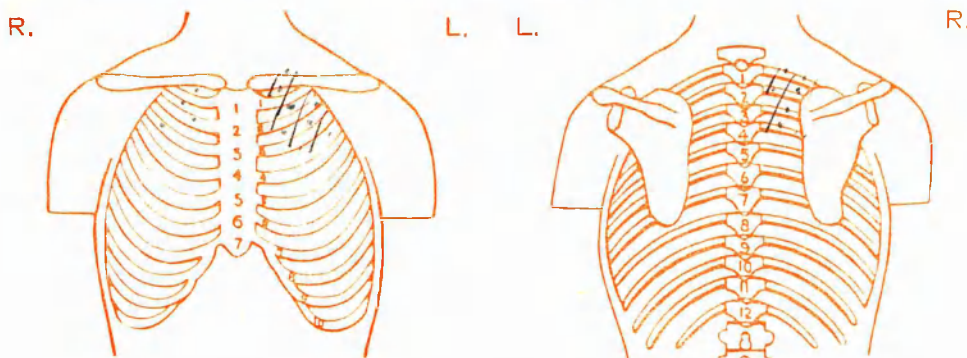


Diagnosis. Phthisis in intermediate stage.

Sputum. Thick, greyish-yellow, mucopur't.
Albumen slight.
Tubercle bacilli numerous.

Case 35. J.McL. Male, aged 59. Western Infirmary Dispensary.

Examined Aug.26, 1910.



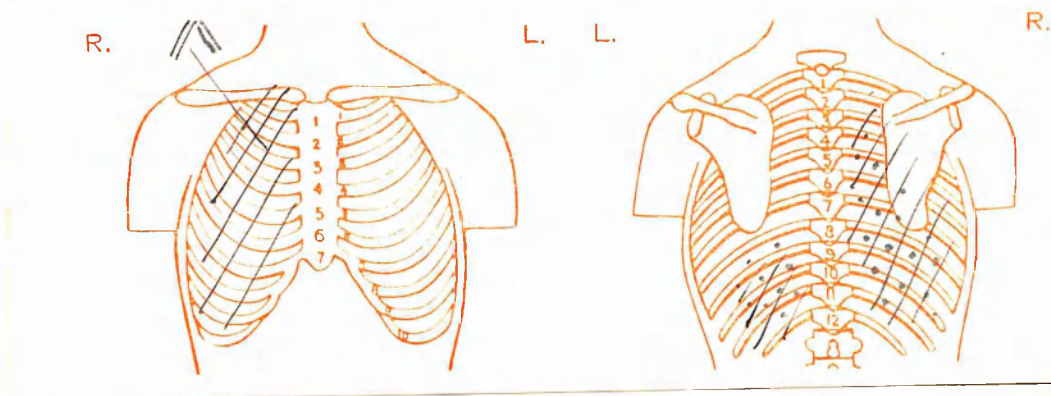
Diagnosis. Phthisis in intermediate stage.

Sputum. Thick, green, mucopurulent.
Albumen abundant.
T.B. numerous.

Case 36. J.McL. Female, aged 10. Possil Dispensary.

Illness began with pleurisy on right side in Jan. 1910.
Cough and spit since then.

Examined Oct. 6, 1910. Emaciated, anaemic, with evidence
of past rickets; suffers from dyspnoea and
sweats at nights.
Physical signs -



Diagnosis. Advanced phthisis.

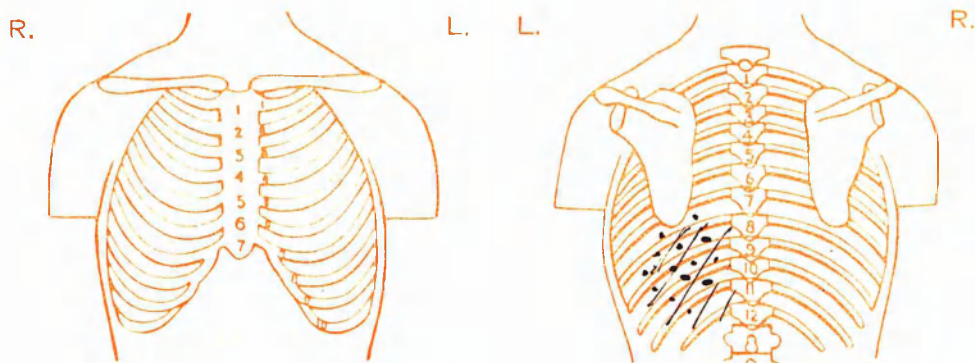
Sputum. Copious, green, mucopurulent.
Albumen considerable.
T.B. not found.

Died Dec. 12, 1910,
Death certified as due to
tubercular peritonitis.

Case 57. W.W. Male, aged 15. Possil Dispensary.

History. Delicate since birth, but troubled by cough and spit following an attack of measles and whooping-cough 3 years ago.

Examined Aug.15,1910. A thin, pale boy, with severe cough, copious expectoration, dyspnoea, profuse sweating and weakness.
Temp. on afternoon of examination - 99.2° F.
Physical signs -



Re-examined Dec.12,1910. Signs as before.

Re-examined May 1911, on return from Bridge-of Weir Sanatorium. Still dulness and rale at left base though less marked than in August.
Was dismissed from Bridge-of-Weir on account of having developed acute tubercular disease of the lower dorsal vertebrae, accompanied by paralytic symptoms.

Diagnosis. Phthisis in intermediate stage.

Sputum. Aug.15,1910. Thick, grey, mucous.

Albumen absent.

T.B. not found, exam'd 30/8/10.

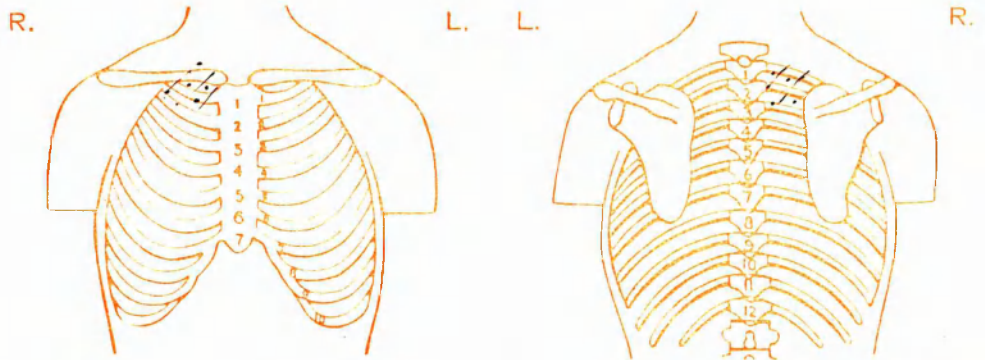
T.B. not found, exam'd 19/12/10.

Case 38. R.W. Male, aged 15. Possil Dispensary.

History. Pleurisy on right side a year ago.

Examined Mar. 6, 1911. Thin, pale, ill-looking, with severe cough, slight spit; complains of shortness of breath, loss of flesh, weakness, and poor appetite.

Physical signs -



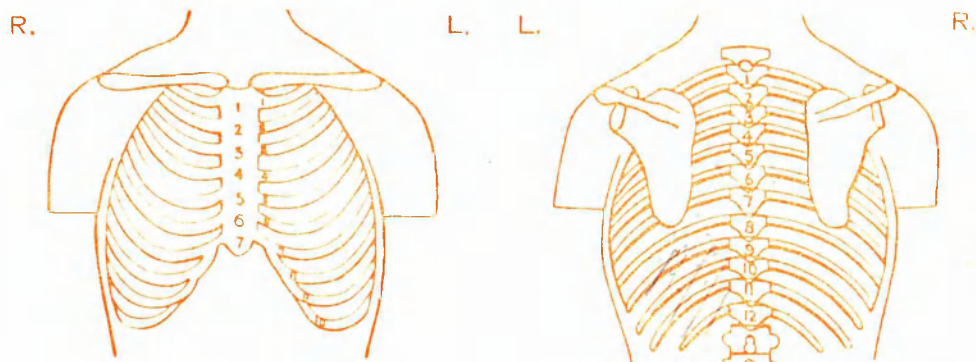
Diagnosis. Early phthisis.

Sputum. Thin, grey, mucous.
Albumen moderate.
T.B. not found.

Case 39. A.S. Female, aged 17. Possil Dispensary.

History. Cough more or less for years. Severe cough and spit for last seven months, with pain in back, loss of flesh, profuse night sweats and amenorrhoea.

Examined Aug.4, 1910. Physical signs -



Diagnosis. Advanced phthisis.

Sputum. Thick, green, mucopurulent.

Albumen abundant.

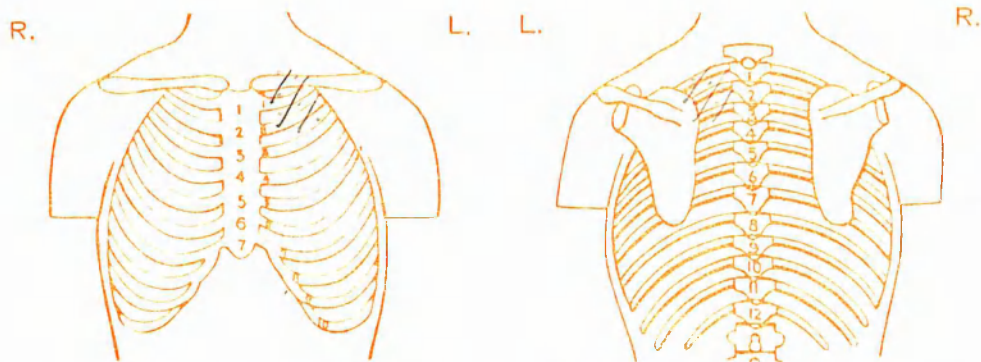
T.B. not found 8/7/10.

-- -- -- 8/8/10.

-- -- -- 14/2/11.

Case 40. M.A.C. Female, aged 19.

History. Tubercular disease of foot 10 years ago.
Cough, spit, loss of flesh, night sweats ef
for last six months. Slight haemoptysis
six months ago.
Physical signs - examined Dec.29, 1910.



Diagnosis. Early phthisis.

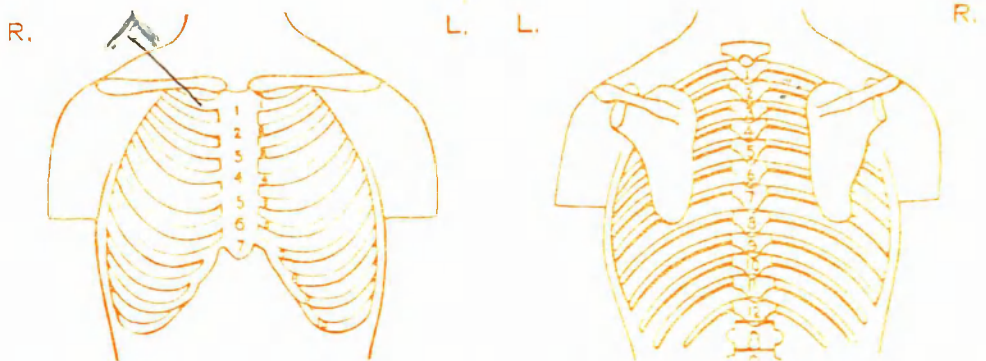
Sputum. Thick, greenish-yellow, mucopurulent.
Albumen moderate.
T.B. not found.

Jan.5, 1911. A free haemoptysis.

Case 4I. B.McD. Female, aged 22. Possil Dispensary.

History. Pleurisy 9 months ago, and again 3 months ago.
Slight haemoptysis 2 days before examination.
Mother died aged 4I of "bronchitis".

Examined July 28, 1910. Physical signs -



Diagnosis. Early phthisis.

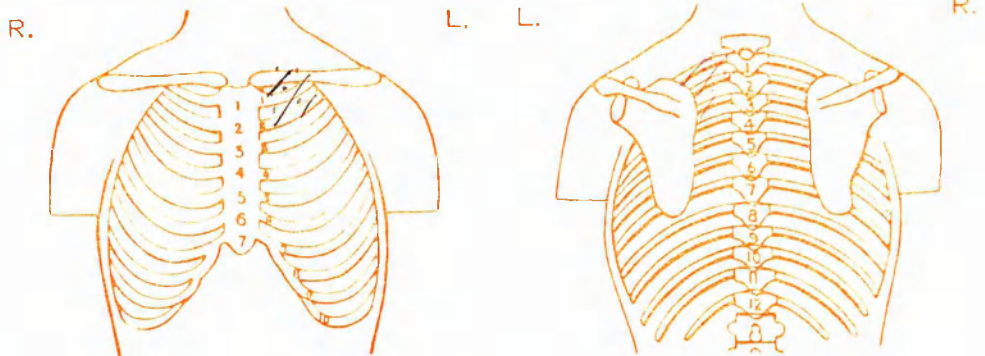
Sputum. Thick, yellow, mucopurulent.
Albumen moderate.
T.B. not found - two examinations.

Re-examined Nov.24, 1910. Physical signs as before.

Case 42. Mrs H. aged 23. Possil Dispensary.

History. Pneumonia 6 months ago; cough and spit since then.
Husband died 8 months ago of phthisis.

Examined Mar. 16, 1911. Physical signs -



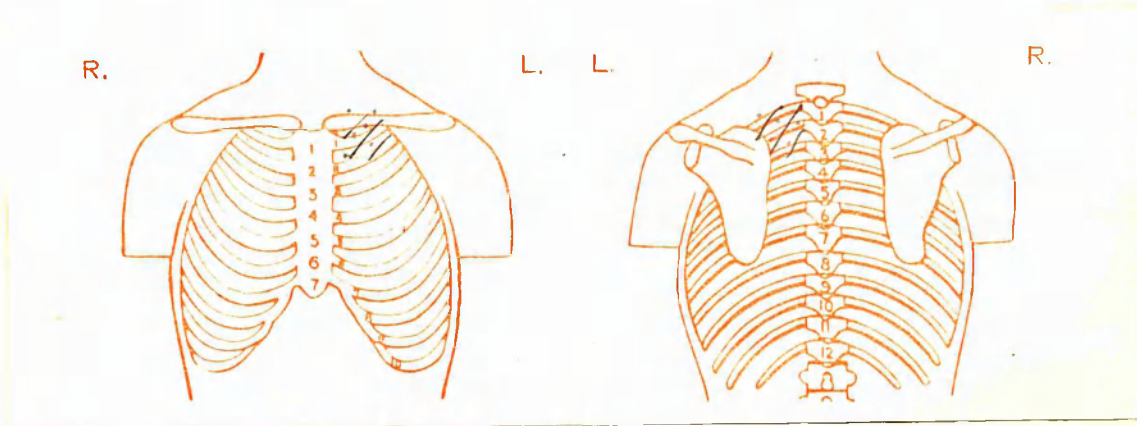
Diagnosis. Early phthisis.

Sputum. Thin, pinkish ~~el~~ coloured, purulent.
Albumen abundant.
T.B. not found.

Case 43. Mrs McN. aged 23. Possil Dispensary.

Illness began with cough, spit, loss of flesh and strength, after a confinement 10 months ago.
A sister died of phthisis in May, 1907.
A brother was sent to Bellefield on account of phthisis in September, 1910.

Examined Dec. 8, 1910. Physical signs -



Diagnosis. Early phthisis.

Sputum. Copious, yellow, mucopurulent.
Albumen abundant.
T.B. not found - two examinations.

Case 44. S.D. Female, aged 31. Western Infirmary Dispensary.

History of cough and spit, loss of flesh, weakness
and night sweats for over a year.

Examined Fe.27, 1910. Generalised signs of bronchitis
with much moist rale.

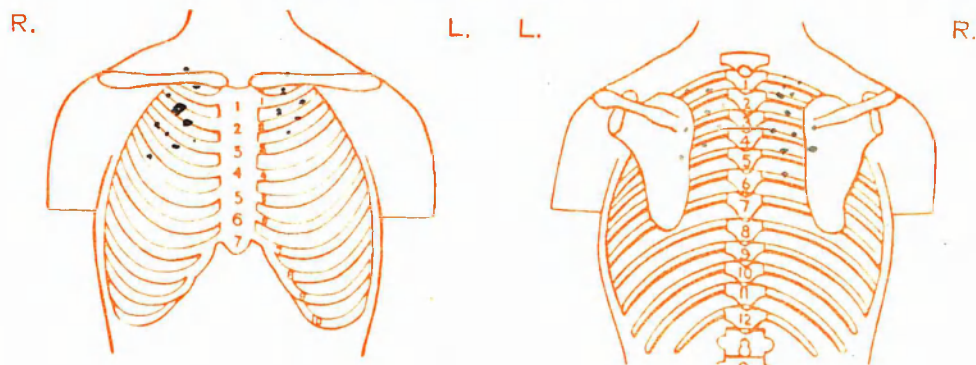
Diagnosis. Advanced phthisis.

Sputum. Very purulent, green.
Albumen abundant.
T.B. not found.

Case 45. Mrs McL. aged 33. Possil Dispensary.

History of pneumonia in August, 1909, followed by
cough, spit and loss of flesh ever since.
Haemoptysis in December, 1909.

Examined Dec.15, 1910. Physical signs - coarse and
fine rales as under; no dulness.



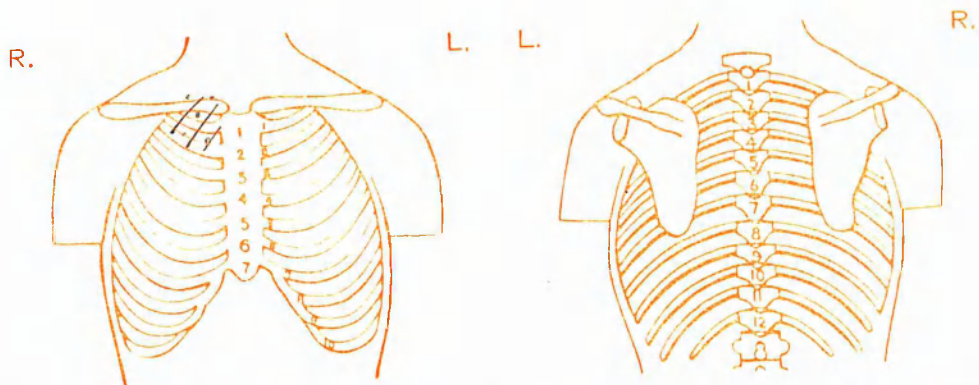
Diagnosis. Phthisis moderately advanced.

Sputum. Green, mucopurulent, foetid.
Albumen abundant.
T.B. not found.

Case 46. E.K. Male, aged 33. Possil Dispensary.

History of free haemoptysis 3 years ago; no trouble since then till a few weeks before examination, when the fog brought on cough and spit. The spit has occasionally been blood-streaked.

Examined Feb. 13, 1911. Physical signs -



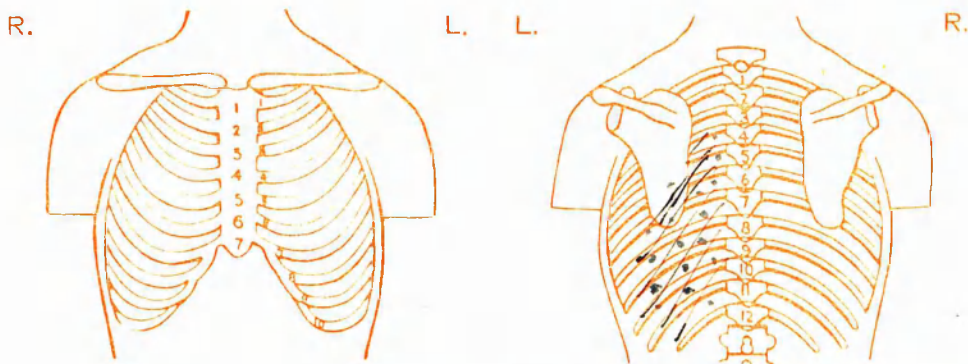
Diagnosis. Early phthisis.

Sputum. Thick, green-yellow, mucopur't.
Albumen considerable.
T.B. not found.

Case 47. Mrs S. aged 33. Possil Dispensary.

History of cough and spit, with occasional haemoptysis for the past 3 months, also of loss of flesh and strength.

Examined Dec.29, 1910. Physical signs -



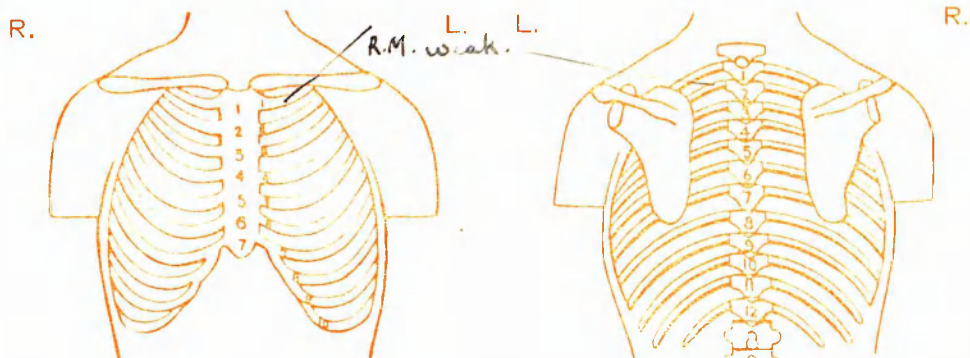
Diagnosis. Advanced phthisis.

Sputum. Copious, green-yellow, purulent.
Albumen considerable.
T.B. not found.

Case 48. J.M. Male, aged 41. Possil Dispensary.

Illness began with several free haemoptyses in May 1910.
Since then he has suffered from cough and spit,
shortness of breath and weakness.

Examined Dec.5, 1910. Physical signs -



Diagnosis. Early phthisis.

Sputum. Scanty, grey, mucous.
Albumen absent.

T.B. not found, examined for - 10/12/10,
12/12/10 and 20/1/11.

Case 49. W.W. Male, aged 52. Western Infirmary Dispensary.

History of cough and spit, night sweats, loss of flesh and strength for over a year.

Examined May 7, 1910.

Physical signs - R.M. generally poor, coarse & fine rales all over chest, no dulness.

Diagnosis. Advanced phthisis.

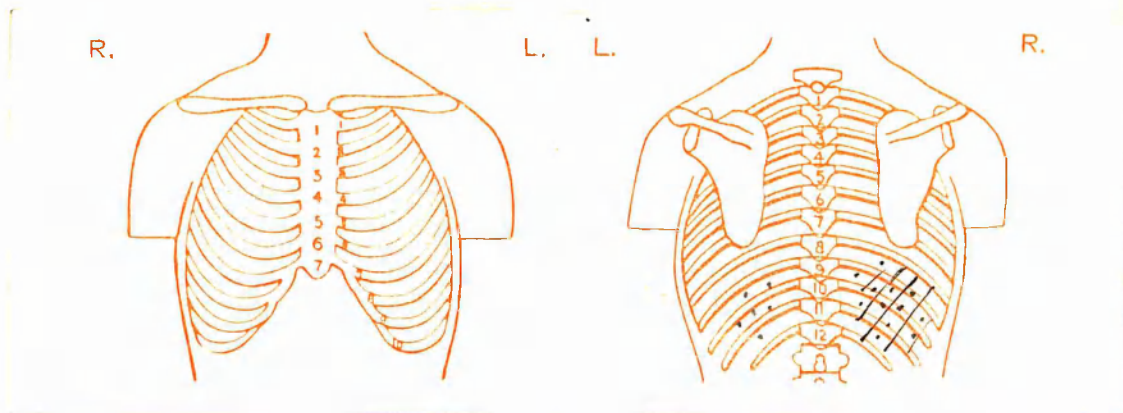
Sputum. Green, purulent, foetid.
Albumen abundant.
T.B. not found.

Case 50. Mrs S. aged 57. Possil Dispensary.

History of cough, spit, loss of flesh and strength for about 3 years, and of several haemoptyses in September, October and November, 1910.

Examined Sep.29, 1910. and again Dec.29, 1910.

Physical signs much the same on both occasions.



Diagnosis. Phthisis moderately advanced.

Sputum.. Thick, green-yellow, mucopurulent.
Albumen slight.
T.B. not found.

Case 51. H.N. Male, aged 45. Ward 3I. Western Infirmary.

Diagnosis. Myocardial disease; arterio-sclerosis.
? chronic Bright's disease.

Examined July 15, 1910. dulness and rale at bases.

Sputum. Greenish, mucopurulent.
Albumen slight.
T.B. not found.

Case 52. J.McD. Male, aged 55. Western Infirmary Dispensary.

Diagnosis. Aortic regurgitation.

Examined Oct.25, 1910.

Sputum. Thin, greyish, mucous.
Albumen slight.
T.B. not found.

Case 53. J.D. Male, aged 57. Ward 3I, Western Infirmary.

Diagnosis. Malignant disease of stomach.

Examined July 20, 1910.

Sputum. Greenish, mucopurulent.
Trace of albumen.
T.B. not found.

Case 54. Mrs S. aged 43. Ward 2, Western Infirmary.

Diagnosis. Pernicious anaemia.

Sputum. Mucopurulent.
Albumen absent.
T.B. not found.

Examined Aug.20, 1910.

Case 55. E.E. Male, aged 17. Ward 3I, Western Infirmary.

Diagnosis. Lobar pneumonia.

Examined May 2I, 19II, on 7th day of illness.
Temperature 103° - 105° F.

Sputum. Mucous, blood-stained.
Albumen abundant.
T.B. not found.

Case 56. P.H. Male aged 32. Ward 3I, Western Infirmary.

Diagnosis. Lobar pneumonia.

Examined May 2I, 19II, on 6th day of illness.
Temperature 102° - 99° F.

Sputum. Mucopurulent.
Albumen abundant.
T.B. not found.

Case 57. A.B. Male, aged 15. Private patient.

Diagnosis. Lobar pneumonia; resolving.

Examined May 9, 19II, four days after crisis.

Sputum. Thick, yellow, mucopurulent.
Albumen abundant.
T.B. not found.

Case 58. R.S. Male, aged 13. Private patient.

Diagnosis. Lobar pneumonia, resolving.

Examined April 20, 19II, three days after crisis.

Sputum. Yellowish, mucopurulent.
Albumen considerable.
T.B. not found.

Case 59. F.C. Male, aged 18. Ward 3I, Western Infirmary.

Diagnosis. Lobar pneumonia, resolving.

Examined May 11, 1911, two days after crisis.

Sputum. Mucopurulent, tenacious, slightly
blood-stained.

Albumen - a trace.

T.B. not found.

Case 60. G.W. Male, aged 22. Ward 3I, Western Infirmary.

Diagnosis. Lobar pneumonia, resolving.

Examined Feb. 25, 1911, nine days after crisis.

Sputum. Yellowish, mucopurulent.

Albumen moderate.

T.B. not found.

Case 61. J.F. Male, aged 22. Ward 6, Western Infirmary.

Diagnosis. Lobar pneumonia, resolving.

Examined May 21, 1911, four days after crisis.

Sputum. Copious, frothy, mucopurulent.

Albumen absent.

T.B. not found.

Case 62. G.K. Male, aged 32. Ward 3I, Western Infirmary.

Diagnosis. Lobar pneumonia, resolving.

Examined Dec. 19, 1910, nineteen days after crisis.

Sputum. Thick, grey, mucous, slightly pur't.

Albumen slight.

T.B. not found - repeated exam's.

In this case, though the crisis occurred on Nov. 30, resolution was delayed and there was irregular pyrexia up till Dec. 25, after which date pyrexia ceased and resolution proceeded quickly.

Case 63. B.H. Male, aged 34. Ward 31, Western Infirmary.

Diagnosis. Lobar pneumonia, resolving.

Examined Oct. 24, 1910, three days after crisis.

Sputum. Greenish-yellow, mucopurulent.
Albumen moderate.
T.B. not found.

Case 64. W.C. Male, aged 18. Ward 33, Western Infirmary.

Diagnosis. Acute bronchitis and emphysema.

Examined May 1, 1911. Temperature 101° - 102° F.

Sputum. Thick, yellow, mucopurulent.
Albumen abundant.
T.B. not found.

Examined May 11, 1911. Temperature normal.

Sputum. Mucopur't but less purulent than
when last examined.
Albumen slight.
T.B. not found.

Case 65. J.L. Male, aged 32. Ward 7, Western Infirmary.

Diagnosis. Acute bronchitis and emphysema.

Examined May 21, 1911. Temperature normal.

Sputum. Thick, green, mucopurulent.
Albumen slight.
T.B. not found.

Case 66. M.T. Female, aged 35. Ward 2, Western Infirmary.

Diagnosis. Acute bronchitis.

Examined Oct. 20, 1910. Temperature normal.

Sputum. Copious, mucous.
Albumen absent.
T.B. not found.

Case 67. D.McL. aged 8. Possil Dispensary.

History of measles at 1 year old, whooping-cough at 4 years, cough each winter.

Examined Aug. 15 & 29, 1910, and Nov. 21, 1910.

Nothing suggestive of phthisis discovered.
Von Pirquet's test positive.

Sputum. Thin, grey, mucous. (7/11/10).
Albumen moderate.

T.B. not found; examined for on
Sep. 3, and Nov. 5 & 11, 1910.

Diagnosis. Chronic bronchitis.

Case 68. J.C. Male aged 8½. Possil Dispensary.

History of measles at age of 2 years; pneumonia at 4 ;
cough and spit more or less since infancy.

Examined Nov. 14, 1910. No dulness; a few rhonchi.
Von Pirquet's test positive.

Sputum. Greyish, mucous, slightly purulent.
Albumen - a trace.

T.B. not found; examined for on
Nov. 18, and Dec. 3, 1910.

Re-examined May 1, 1911. Chest appears quite normal.

Diagnosis. Bronchitis.

Case 69. N.McL. Female, aged 9½. Possil Dispensary.

History of measles at age of 1 year, whooping-cough at 5 years; has never been strong.

Examined Dec. 22, 1910. No dulness; a few rales at
both bases.

Von Pirquet's test negative 6/4/11, pos. 11/4/-

Sputum. Thick, greyish, mucopurulent.
Albumen absent.

T.B. not found.

Re-examined Mar. 9, 1911. Signs much as before, but
rales are scantier.

Diagnosis. Chronic bronchitis.

Case 70. M.M. Female, aged 10. Possil Dispensary.

History. Whooping-cough at age of 2 years, measles at 5 years, attacks of bronchitis two or three times a year ever since.

Examined Oct. 6, 1910. No dulness, no rale, much rhonchus generally.

Sputum. Greyish-yellow, mucopurulent.
Albumen absent.
T.B. not found.

Diagnosis. Bronchitis.

Re-examined Apr. 24, 1911. No abnormal signs.

Case 71. A.B. Male, aged 12. Possil Dispensary.

History of cough for one month.

Examined Mar. 13, 1911: Nothing suggestive of phthisis
Von Pirquet's test positive.

Sputum. Thick, greyish-yellow, mucopur't.
Albumen absent.
T.B. not found; examined for on
Mar. 23 and Apr. 4, 1911.

Diagnosis. Bronchitis.

Case 72. W.T. Male, aged 12. Possil Dispensary.

History of measles and whooping-cough in infancy, and of bronchitis more or less ever since.
Von Pirquet's test positive.

Examined. Feb. 2, 1911. No dulness or rale.

Sputum. Copious, mucous.
Albumen - a trace.
T.B. not found.

Diagnosis. Bronchitis.

Note. The fact that in the preceding six cases Von Pirquets test gave positive results was not considered any proof of the existence of pulmonary tuberculosis, as it is recognised that a positive reaction is obtained in a large proportion of children above the age of infancy, who are not the subjects of active tubercular disease.

Case 73. M.McG. Female, aged 13. Possil Dispensary.

History of bronchitis at age of 8 months and ever since.

Examined Feb. 23, 1911. A well-nourished girl, with good colour; marked clubbing of fingers. Von Pirquet's test negative on Apr. 6 and Apr. 11, 1911. On Feb. 23, much rhonchus and coarse and fine rale all over chest.

Sputum. Thick, yellow, mucopurulent.
Albumen abundant.
T.B. not found; two examinations.

Diagnosis. Chronic bronchitis. The negative reaction to Von Pirquet's test is important.

Case 74. A.R. Female, aged 13. Possil Dispensary.

History of measles in infancy, whooping-cough at age of 4 years. Has had cough and spit for past two months.

Examined Feb. 16, 1911. A healthy looking girl. No signs of phthisis.

Sputum. Greyish, slightly mucopurulent.
Albumen slight.
T.B. not found.

Diagnosis. Bronchitis.

Case 75. M.B. Female, aged 13. Possil Dispensary.

History. Measles in infancy, whooping-cough at age of 1 year. Has had a cough for about a year, which was worse in winter.

Examined Dec. 8, 1910. A few rhonchi over right apex. Apr. 13, 1911. After being in the country for 7 weeks the child presents no abnormal signs in the chest. Von Pirquet's test negative on Apr. 10 & 13.

Diagnosis. Bronchitis.

Case 75. E.H. Female, aged 18. Possil Dispensary.

History of cough "off and on" for three years.

Examined Nov.10, 1910, Jan.6 and Jan.13, 1911, but no signs suggestive of phthisis discovered.

Sputum. Scanty, mucous.
Albumen - a trace.
T.B. not found.

Diagnosis. Bronchial catarrh.

Case 77. A.P. Female, aged 24. Western Infirmary Dispensary.

Examined Aug. 20, 1910. No sign of phthisis.

Sputum. Greyish, mucous.
Albumen absent.
T.B. not found.

Diagnosis. Anaemia, bronchial catarrh.

Case 78. M.H. Female, aged 30. Possil Dispensary.

Examined Feb.23, 1911. A few rhonchi at right apex.
No sign of phthisis.

Sputum. Yellowish-grey, mucopurulent.
Albumen - a trace.
T.B. not found.

D. Bronchitis.

Case 79. J.McC. Male, aged 30. Possil Dispensary.

History of pleurisy 3 years ago; cough sincethen.

Examined Mar. 6, 1911. No dulness; R.M. not quite so good over left lung, and a few rhonchi heard; no rale.

Sputum. Grayish-green, mucopurulent.
Albumen - a trace.
T.B. not found.

Re-examined May,15, 1911. No abnormal signs found.

Diagnosis. Bronchitis.

Case 80. Mrs H. aged 30. Possil Dispensary.

History of bronchitis 5 years ago and at various times since then.

Examined Feb. 2, 1911. A few rales heard over both upper lobes. No dulness

Sputum. Thick, mucous.
Albumen absent.
T.B. not found.

Diagnosis. Bronchitis.

Case 81. Mrs McG. aged 36. Possil Dispensary.

No previous illness. Cough first became troublesome last winter.

Examined Dec. 22, 1910. Stout, well-coloured woman.

Sputum. Thick, greyish, mucous.
Albumen - a trace.
T.B. not found.

Diagnosis. Bronchitis.

Case 82. T.N. Male, aged 36. Possil Dispensary.

History of pleurisy a year ago; slight cough since.

Examined Jan Aug. 1, 1910. No sign of phthisis.

Sputum. Scanty, greyish, mucous.
Albumen absent.
T.B. not found.

Diagnosis. Bronchial catarrh.

Case 83. S.M. Female, aged 39. Western Infirmary Dispensary.

Examined July 28, 1910. Abundant rhonchi.

Sputum. Green, mucopurulent.
Albumen slight.
T.B. not found.

Diagnosis. Chronic bronchitis and asthma.

Case 84. W.B. Male, aged 41. Possil Dispensary.

Examined Feb. 20, 1911. No dulness; abundant rhonchi.

Sputum. Thin, yellowish, purulent.
Albumen - a trace.
T.B. not found.

Diagnosis. Chronic bronchitis.

Case 85. Mrs G. aged 42. Possil Dispensary.

History of bronchitis for past two years.

Examined. Oct. 22, 1910. Generalised rhonchi.

Sputum. Thick, greenish, mucopurulent.
Albumen moderate.
T.B. not found. Two examinations.

Diagnosis. Chronic bronchitis.

Case 86. J.C. Male, aged 44. Western Infirmary Dispensary.

History of cough, spit and shortness of breath for some years.

Examined. July 13, 1910. Signs are those of chronic bronchitis and emphysema.

Sputum. Green, purulent.
Albumen moderate.
T.B. not found.

Diagnosis. Chronic bronchitis.

Case 87. Mrs M.M. aged 45. Ward 2, Western Infirmary.

History of winter cough and breathlessness on exertion for some years. Sputum sometimes blood-streaked. Slight haemoptysis 5 years ago.

Examined Feb. 23, 1911. No dulness, numerous rhonchi and coarse and fine rales.

Sputum mucopur't. No albumen. No T.B. found.

Diagnosis. Chronic bronchitis.

Case 88. R.M. Male, aged 45. Possil Dispensary.

History of cough and shortness of breath for a year.

Examined Apr. 14, 1911. No sign of phthisis.

Sputum. Thin, scanty, mucous.
Albumen not found.
T.B. not found.

Diagnosis. Chronic bronchitis and emphysema.

Case 89. J.D. Male, aged 46. Possil Dispensary.

History of pleurisy four years ago, and of cough and spit since then.

Examined July 7, 1911. No sign of phthisis.

Sputum. Mucopurulent.
Albumen slight.
T.B. not found.

Diagnosis. Chronic bronchitis and emphysema.

Case 90. Mrs C. aged 48. Possil Dispensary.

History of cough for a few weeks.

Examined Jan. 12, 1911. No sign of phthisis.

Sputum. Copious, mucous.
Albumen absent.
T.B. not found.

Case 91. Mrs McG. aged 50. Ward 2, Western Infirmary.

History of cough and spit of ten days duration; also of cough a month earlier, and 4 years ago.

Examined Oct. 20, 1910. Rhonchi and rales general.

Sputum. Thick, yellow-green, mucopurulent.
Albumen abundant.
T.B. not found.

Case 92. J.McL. Male, aged 50. Possil Dispensary.

Examined Aug.29, 1910. No dulness; a good deal of râle at both bases behind.

Sputum. Scanty, mucous.
Albumen absent.
T.B. not found.

Diagnosis. Chronic bronchitis.

Case 93. J.S. Male, aged 51. Ward 31, Western Infirmary.

Examined July 20, 1910. Hyper-resonance, rhonchi and râles general.

Sputum. Greenish, mucopurulent.
Albumen absent.
T.B. not found.

Case 94. H.G. Male, aged 52. Possil Dispensary.

Examined Nov.21, 1910. Signs of emphysema.

Sputum. Scanty, mucopurulent.
Albumen absent.
T.B. not found. Two examinations.

Diagnosis. Chronic bronchitis and emphysema.

Case 95. R.McC. Male, aged 53. Possil Dispensary.

Examined Mar.6, 1911. Signs of emphysema.

Sputum. Scanty, grey-green, mucopurulent.
Albumen moderate.
T.B. not found.

Diagnosis. Chronic bronchitis and emphysema.

Case 96. J.M. Male, aged 59. Possil Dispensary.

History of bronchitis for 16 years.

Examined Dec.29, 1910. Signs of emphysema.

Sputum. Thick, green, mucopurulent.
Albumen moderate.
T.B. not found.

Diagnosis. Chronic bronchitis and emphysema.

Case 97. Mrs M. aged 60. Possil Dispensary.

Examined Apr.8, 1910. Signs of emphysema.

Sputum. Thin, green, purulent.
Albumen - a trace.
T.B. not found.

Diagnosis. Chronic bronchitis and emphysema.

Case 98. P.McG. Male, aged 60. Ward 6, Western Infirmary.

Examined May 21, 1911. Signs of emphysema.

Sputum. Frothy, mucopurulent.
Albumen absent.
T.B. not found.

Case 99. J.M. Male, aged 61. Possil Dispensary.

Examined Feb.6, 1911. Signs of emphysema.

Sputum. Greyish, mucous.
Albumen absent.
T.B. not found.

Diagnosis in cases 98 & 99 - Chronic bronchitis and emphysema.

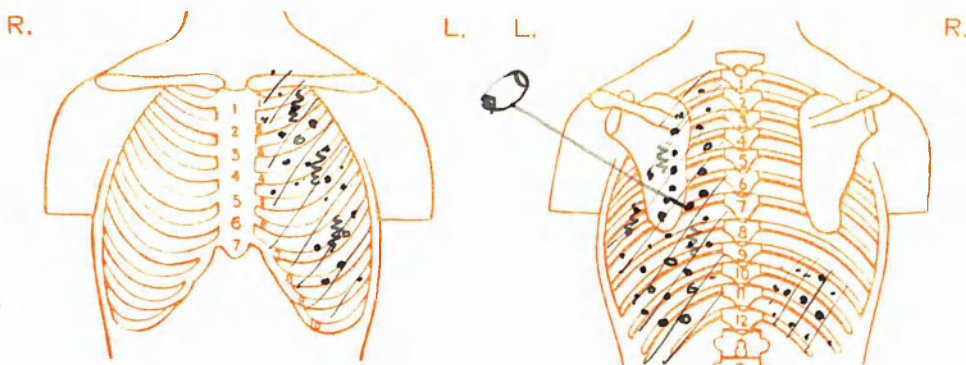
Case 100. A.McK. Female, aged 6. Possil Dispensary.

History of measles at age of 1 year, followed by severe cough and spit, which have continued "off and on" ever since, so that child has been delicate from infancy.

Examined Feb. 8, 1910. A Thin pale child with very marked clubbing of fingers. Severe cough and profuse ill-smelling expectoration.

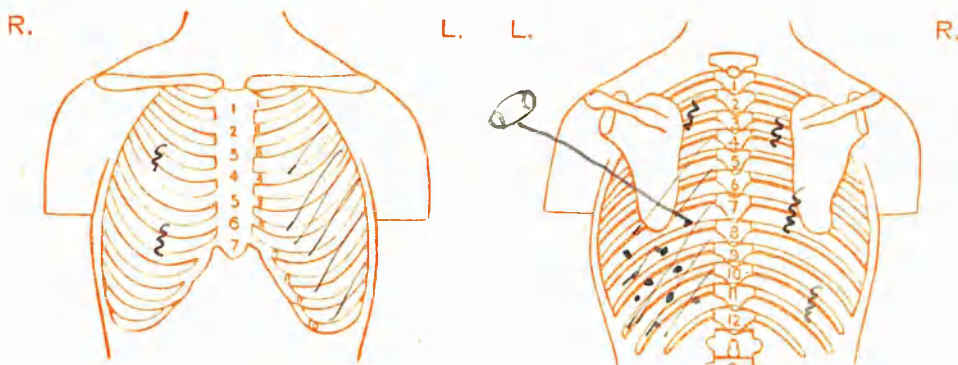
Sputum. Fluid, green, very purulent.
Albumen abundant.
T.B. not found.

Examined Feb. 24, 1910. Physical signs -



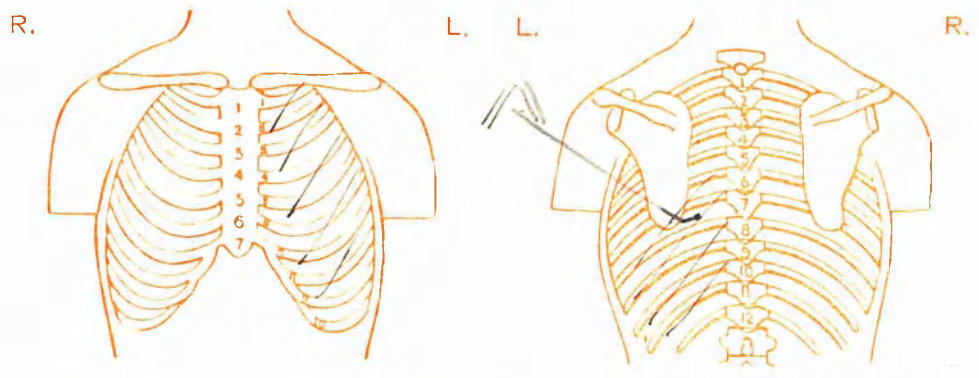
The mother was instructed to make the child lean over edge of bed every morning, and to encourage her, while in this position, to cough freely. In this way large quantities of expectoration were got rid of, and the child's condition improved steadily.

Examined June. 23, 1910. Physical signs -

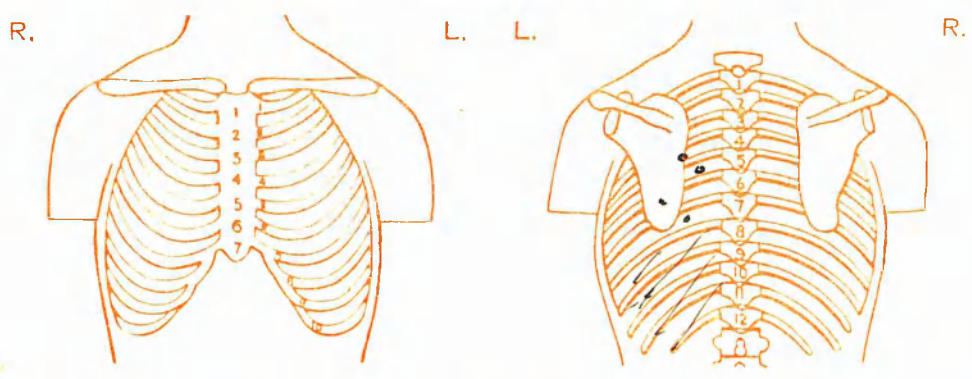


Case 100. continued.

Sputum examined June 23. T.B. not found.
Examined Oct. 20, 1910. Cough and spit much less.
Physical signs -



Sputum examined Nov. 7. T.B. not found.
Albumen abundant.
Sputum green, purul't
Examined Jan. 12, 1911. Cough slight, spit almost
absent, appetite good. General
condition much improved.
Physical signs -



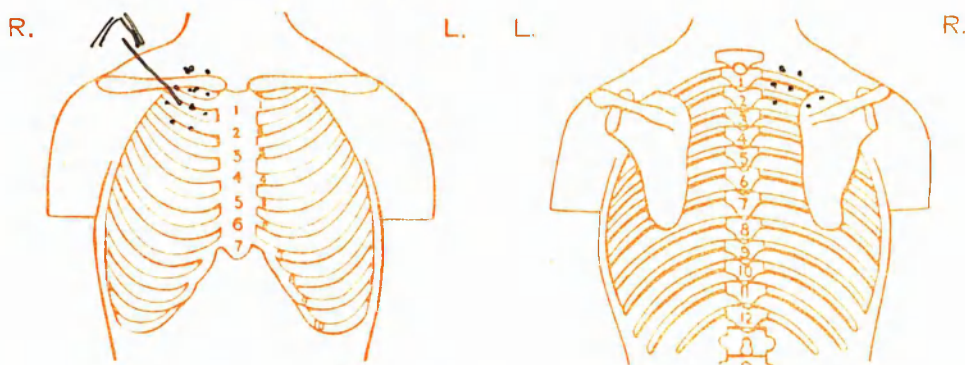
Diagnosis. Bronchiectasis.

It seems most improbable that a child
suffering from tubercular disease of such
extent and severity should not only survive
for a year but also improve so markedly as
this child has done.

Case 101. S.B. Female, aged 8. Possil Dispensary.

History of measles at age of 4 years, whooping-cough at age of 6, and pneumonia at age of 7. Cough "off and on" since whooping-cough.

Examined Oct. 27, 1910. Complaint of slight cough, scanty spit, losing flesh, weakness, sweating at nights, shortness of breath.
Physical signs -



On afternoon of examination -
Temperature 100° F.
Pulse 116.
Respirations 30.

Diagnosis. Early phthisis.

Sputum. Thick, greyish-brown, mucopurulent.
Albumen moderate.
T.B. not found. Three examinations.

Case IO2. E.A. Female, aged 8. Possil Dispensary.

History of measles at age of 4 years; no whooping-cough. Has never been strong.

Present illness began with a "cold" in July, 1909.

Examined Dec.I, 1910. A pale, ricketty child, with severe cough, copious expectoration, story of haemoptysis 9 months ago, marked emaciation, weakness, dyspnoea, sweating at nights, poor appetite.

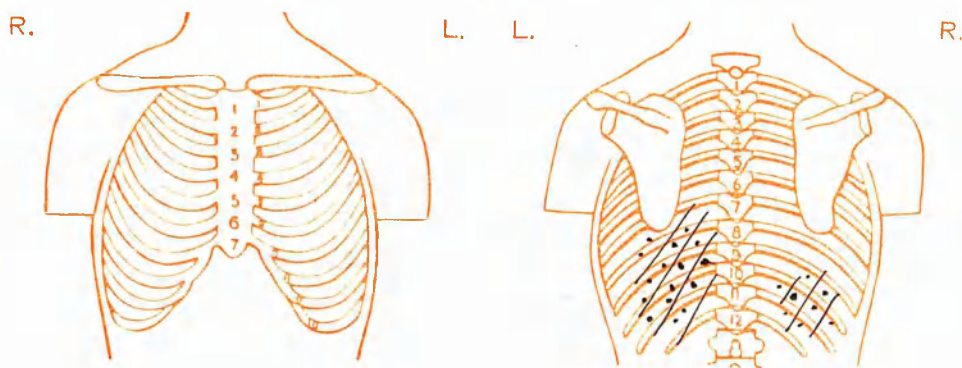
On afternoon of exam. - Temperature 99.6° F.
Pulse 120.
Respirations 48.

Sputum Thin, mucous.
Albumen -a trace.
T.B. not found.

Re-examined Mar.2, 1911. Symptoms considerably improved, but physical signs unaltered.

Re-examined May 11, 1911. Still further improvement in symptoms - coughs only after running, no spit; has gained a little in weight, feels stronger, is less short of breath, has good appetite, but still has cold sweats at nights.
Physical signs as before, though rather less rale .

Physical signs (much the same on all three occasions).



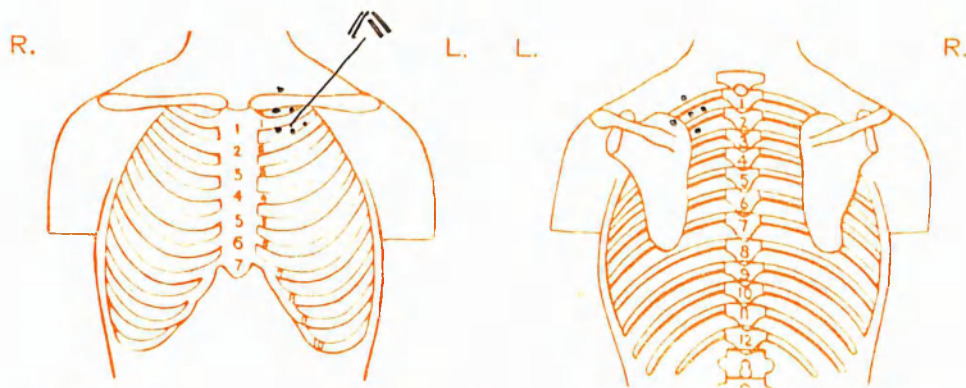
Diagnosis. Probably phthisis in intermediate stage, but possibly a non-tubercular chronic bronhopneumonia.

Von Pirquet's test positive Apr.13, 1911.

Case 103. M.McI. Female, aged 9. Possil Dispensary.

History of measles and whooping-cough in infancy, and of pain in abdomen for past two years.

Examined Sep.29, 1910. A very thin child; complains of severe cough, copious expectoration, dyspnoea, loss of flesh, weakness, night sweats and pain in abdomen. (Afternoon Temp. 98.4° F.)
Physical signs -



Sputum. Copious, grey, mucous.
Albumen absent.
T.B. not found.

Re-examined Dec.29, 1910. No abnormal signs detected in lungs, but signs are apparent of tubercular peritonitis.

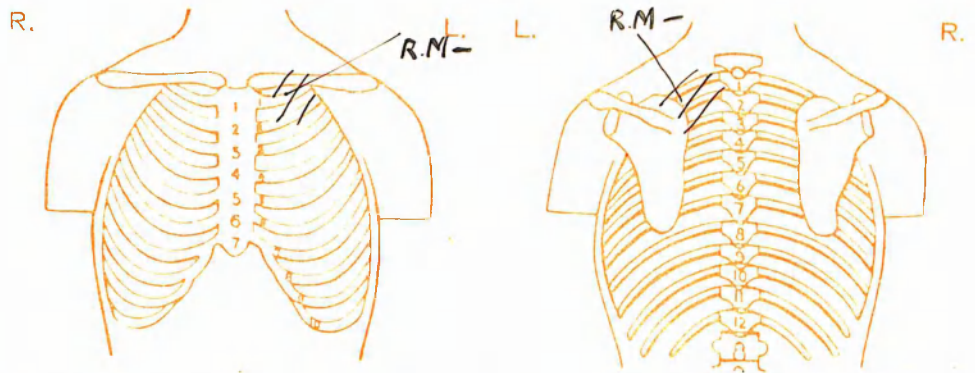
Died Mar.3, 1911, in Sick Children's Hospital, of tubercular peritonitis.

Diagnosis. Early phthisis.

Case IO4. A.McL. Male, aged 18. Possil Dispensary.

History of pneumonia 4 years ago, and of cough for the last 6 months. A brother is at present in Hospital with phthisis.

Examined Nov.7, 1910. A tall, pale, poorly developed and emaciated youth who stoops.
Complaint of morning cough, scanty spit, slight dyspnoea, pain in left side.
Physical signs - (Afternoon Temp. 97°F.)



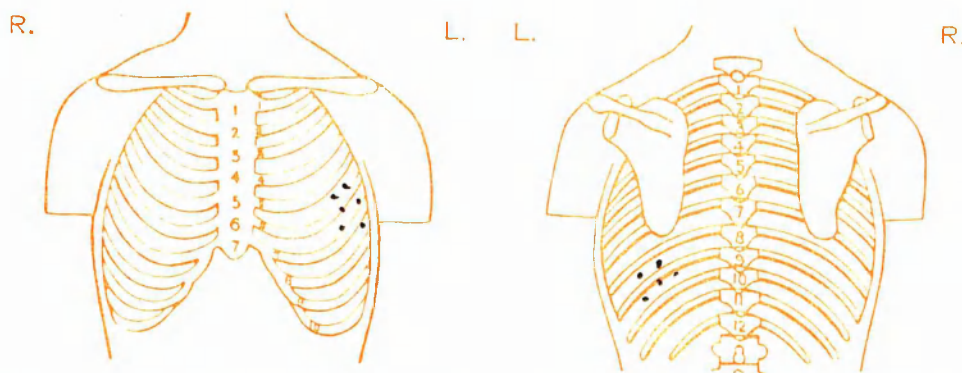
Sputum. Scanty, mucous.
Albumen absent.
T.B. not found.

Diagnosis. Almost certainly early phthisis.

Case IO5. H.D. Male, aged 49. Possil Dispensary.

History of cough for 7 years. Was in Stobhill Hosp.
for about 2 years prior to Sep.9, 1910.

Examined Sep.19, 1910. Somewhat emaciated.
Complains of severe cough, copious expectorat.
sometimes blood-streaked, haemoptysis 2 months
ago, loss of flesh, weakness, dyspnoea, poor
appetite. (Afternoon Temp. 98° F.)
Physical signs -



Sputum. Thick, green, mucopurulent.
Albumen moderate.
T.B. not found.

Diagnosis. Probably phthisis.

Case IO6. T.C. Male, aged 61. Possil Dispensary.

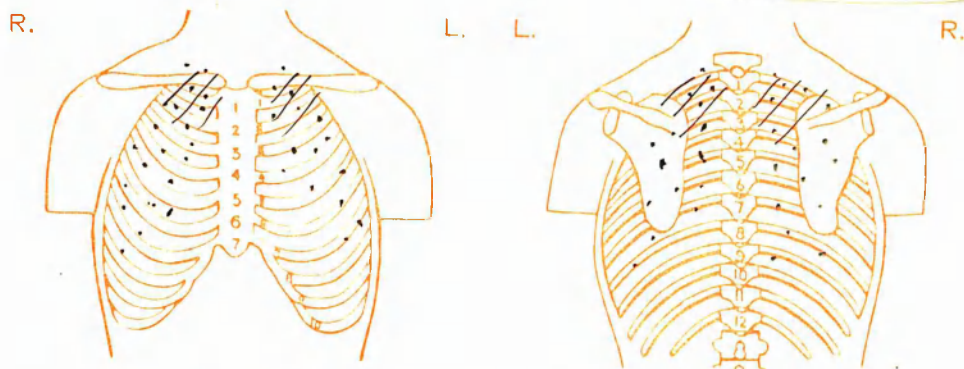
History of cough and shortness of breath for past two years.

One child died of phthisis 5 years ago, and another has phthisis now.

Examined Jan.9, 1911. Much emaciated.

Complains of cough, shortness of breath, loss of flesh and strength.

Physical signs - (Afternoon Temp. 97.6° F.)



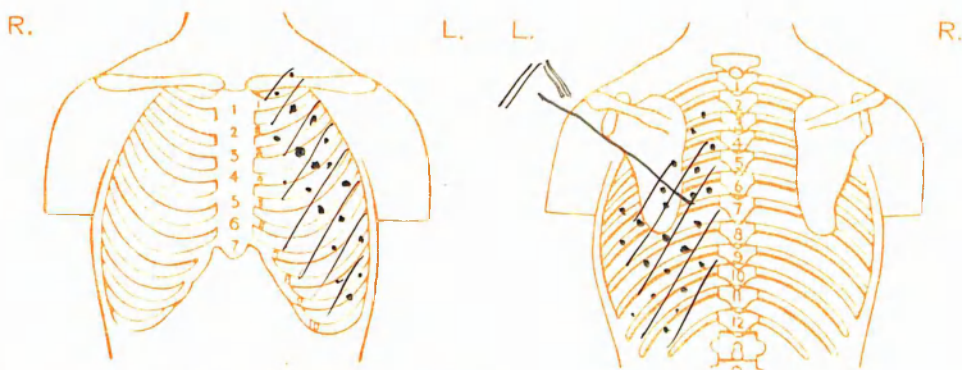
Sputum. Copious, frothy, mucous.
Albumen absent.
T.B. not found.

Diagnosis. Probably advanced phthisis.

Case I07. A.S. Female, aged 5. Possil Dispensary.

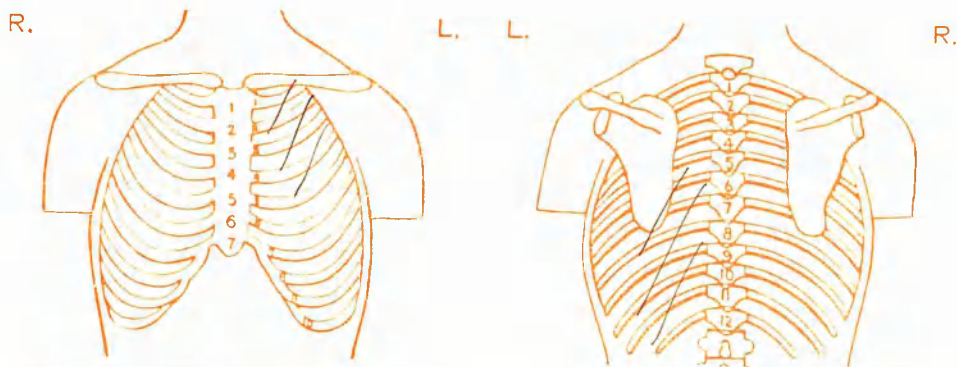
History of whooping-cough and pneumonia at $2\frac{1}{2}$ years of age, and of cough and spit since then.

Examined Jan 12, 1911. Fairly nourished, with fair colour. Complaint of severe cough, copious spit, haemoptysis on two occasions about a month ago, shortness of breath, and sweating at nights. No weakness; no pain; appetite and digestion good.
Physical signs -



Sputum. Thick, yellow, mucopurulent.
Albumen abundant.
T.B. not found. (Two examinations)

Re-examined Apr. 6, 1911. Cough, spit and sweating at night are present only when child "has cold".
Physical signs -



Diagnosis. Probably fibrosis and bronchiectasis, the result of former broncho-pneumonia.
It seems unlikely that a phthisical case would show so much improvement in the

Case IO7 continued.

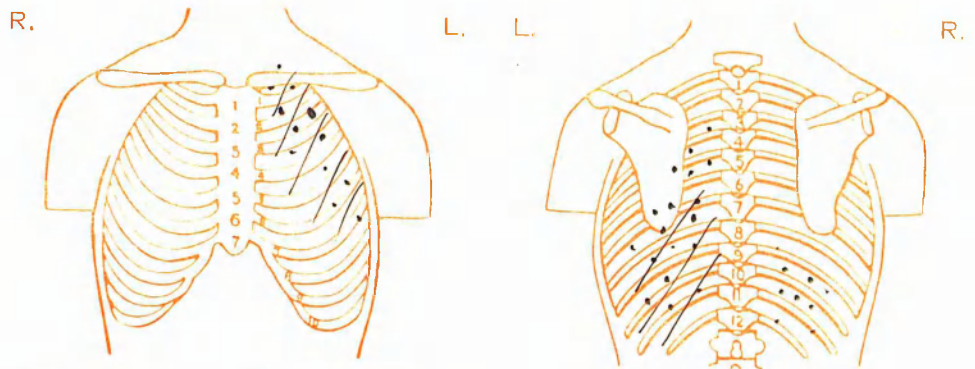
physical signs. The condition is probably similar to that present in Case IOO.

Case IO9. D.M. Male, aged 6. Possil Dispensary.

History of measles at age of 6 months and of cough and wheezing "off and on" ever since.

Examined Aug.8, 1910. Child fairly nourished, with marked "pigeon breast". Complaint of slight cough and spit, some dyspnoea, slight sweating at nights; no pain or weakness.

Physical signs - (Afternoon Temp. 99° F.)



Sputum. Thick, yellow, mucopurulent.

Albumen - slight.

T.B. not found. Four examinations made between Aug. and December.

Re-examined Nov.14, 1910, Feb.13 and Apr.10, 1911.

On latter two dates no complaint of dyspnoea, night sweats, weakness or pain. Appetite and digestion good.

Diagnosis. Probably chronic bronchopneumonia, but possibly tubercular.

Von Pirquet's test positive Apr.13, 1911.

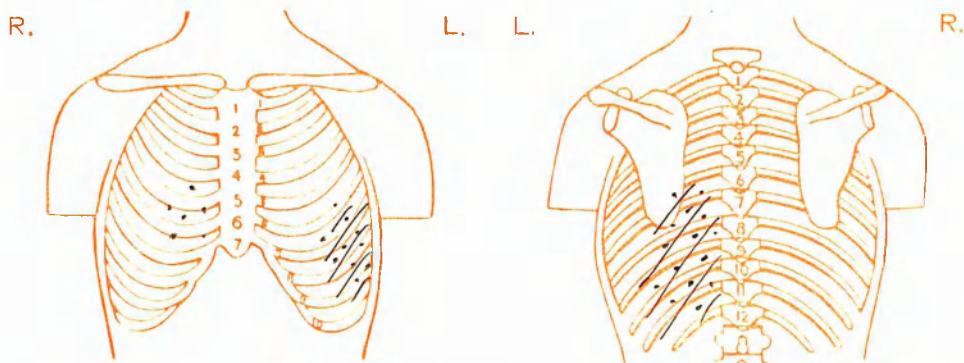
Case IO8 - next page.

Case I08. E.D. Female, aged 5. Possil Dispensary.

History of pneumonia 15 months ago, and of cough and spit since then.

Examined Feb.25, 1910. Fairly nourished child, with slight cough, scanty spit, no complaint of dyspnoea, night sweats or weakness; appetite and digestion good.

Physical signs -



Sputum. Thin, yellow, purulent.
Albumen absent.
T.B. not found.

Re-examined Apr.8, 1910. Physical signs much as before.

Re-examined July 29, 1910. Much improved as regards symptoms and general condition.
No abnormal signs found in lungs.

Diagnosis. Chronic bronchopneumonia. It is not likely that in a tubercular condition so marked an improvement would occur.

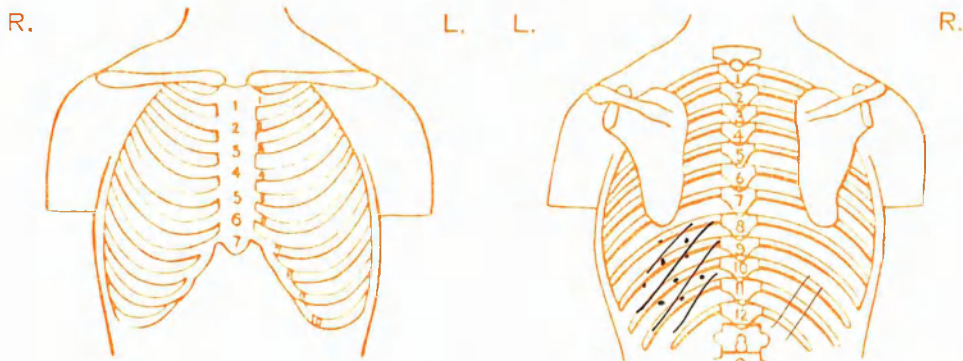
Note. In the preceding three cases- Nos I07, I08, I09, and in case I00, the points regarded as in favour of a diagnosis of non-tubercular disease are briefly the following :-

- 1). The history of long-continued cough and spit, dating from, apparently, an attack of bronchopneumonia.
- 2). The basal situation of the lesions.
- 3). The apparent absence of tubercle bacilli from the spit.
- 4). The absence of the marked anorexia, dyspepsia, weakness and emaciation which usually accompany pulmonary tuberculosis in children.
- 5). The marked improvement observed in the symptoms and physical signs.

Case IIO. A.T. Female, aged II. Possil Dispensary.

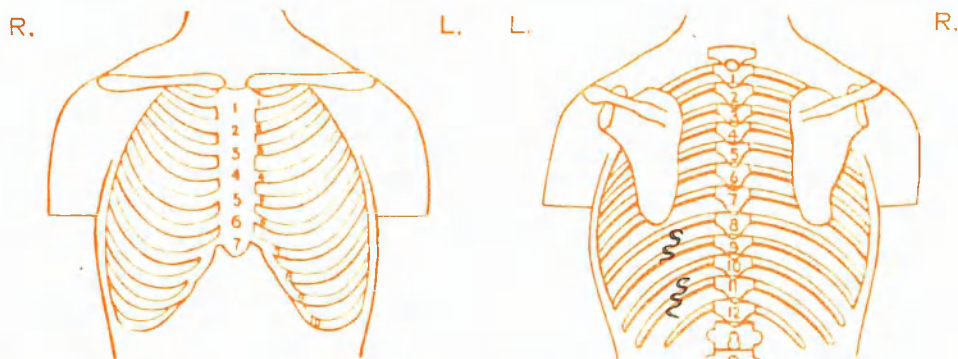
History of having been delicate since early childhood.
Measles at age of 4 years; cough since school
attendance began at age of 5.

Examined Aug.24, 1910. Fairly nourished, but pale.
Complaint of frequent cough, green spit, no
night sweats; appetite and digestion good.
Physical signs = (Afternoon Temp.99°4' F.)



Sputum. Thick, greyish, mucous.
Albumen absent.
T.B. not found. Three examinations.

Re-examined Nov.24, 1910. Symptoms as before but poor
appetite.
Physical signs -



Re-examined May 19, 1911. Physical signs as on Nov.24.

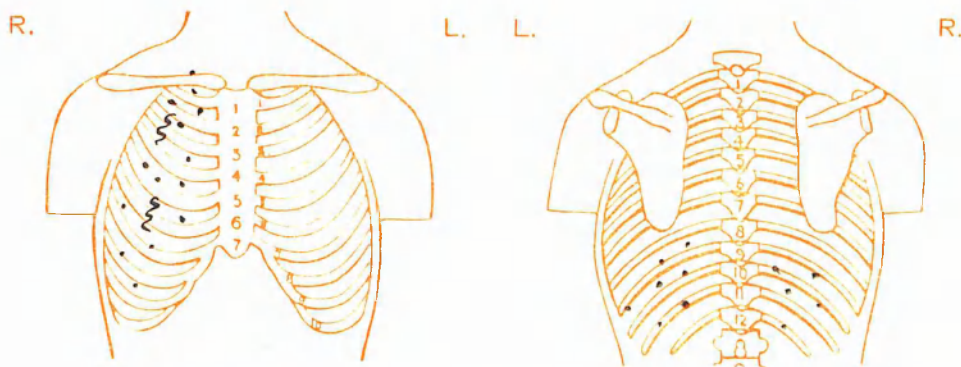
Diagnosis. Bronchitis, but may be tubercular.

Von Pirquet's test positive Apr.27, 1911.

Case III. J.M. Male, aged 17. Possil Dispensary.

History of measles "when young", of pneumonia at age of 7 years, and of "bronchitis" ever since.

- Examined Mar.14, 1910. Fairly nourished lad; colour good; markedly emphysematous type of chest. Complaint of cough severe at times with copious yellow spit, dyspnoea, sweating at night. Appetite and digestion good, afternoon Temp. Physical signs - normal.



Sputum. Green, purulent.
Albumen slight.
T.B. not found. Three examinations.

Re-examined Dec.19, 1910. Less cough and spit, dyspnoea slight, occasional sweating at night. Physical signs much as before.

Re-examined May 8, 1911. Physical signs unchanged.

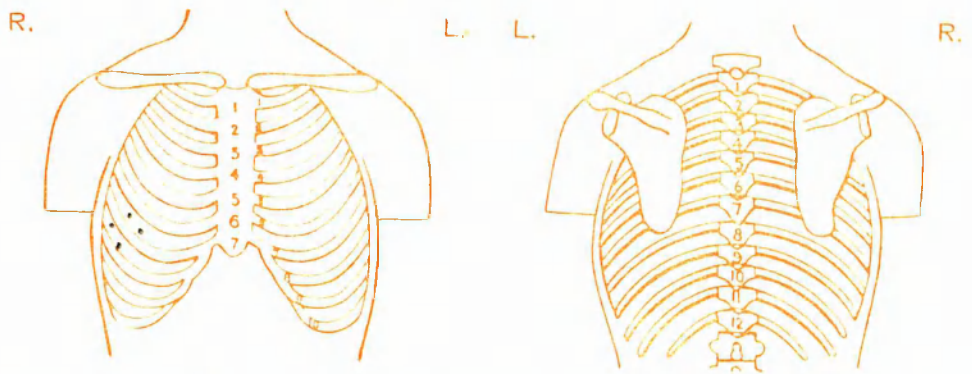
Diagnosis. Probably chronic bronchitis, but may be tubercular.

Von Pirquet's test negative Apr.13, 1911.
- - - - - positive Apr.27, 1911.
This is reckoned to indicate a former tubercular infection, but not a present active lesion.

Case II2. R.D. Male; aged 39. Possil Dispensary.

History of sweating and loss of flesh for past three years. Was in Stobhill Hospital for 3 months in 1908, for 3 weeks in 1909, for 3 weeks and again for 2 weeks (with an interval of 5 weeks between) in 1910.

Examined Jan. 23, 1911. A well-nourished man. Chief complaint is of dyspnoea. No night sweats now. Afternoon Temp. normal. Physical signs - are those of emphysema, but a few rales are heard as under -



Sputum. Copious, greyish, mucopurulent.
Albumen absent.
T.B. not found.

Diagnosis. Probably bronchitis and emphysema, but may be tubercular.